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EPIDEMIC ENCEPHALITIS (NONA)

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CHICAGO

Following Sainton,[1] we may define this disease as "a toxic, infectious, epidemic syndrome, characterized clinically by the triad lethargy, ocular palsies, and a febrile state; and anatomically by a more or less diffuse encephalitis, most marked in the gray matter of the midbrain."

The term "lethargic encephalitis," proposed by Economo[2] in 1917, is descriptive of the most important clinical and anatomic features; but it is illogical, as the patient, not the encephalitis, is lethargic. As there is no other form of encephalitis known to occur epidemically, it would appear sufficiently distinctive to designate the disease as "epidemic encephalitis." The term "sleeping sickness" has already been appropriated for the endemic trypanosomiasis of Africa, and should, therefore, be avoided in connection with the present affection. "Nona," a meaningless word used for a similar disease in 1890, has the advantage of being short as well as noncommittal, and should perhaps be revived.

EPIDEMICS, PAST AND PRESENT

It is a striking fact that the only epidemic appearance of any similar disease in the past has been in connection with epidemics of influenza. Following the pandemic of 1889-1890, the mysterious nona appeared in northern Italy and then in Hungary, and spread westward to Germany, France and Italy. Somnolence was a prominent feature, and cranial nerve paralyses were observed which led Mauthner[3] in 1890 to express the opinion that the probable lesion of nona was an acute hemorrhagic poliencephalitis. The disease was mild, and there were not enough fatalities to permit of any extensive anatomic study. A concise review of the nona literature was contributed in 1892 by a Frenchman, Longuet.[4] Earlier accounts are necessarily more vague. Camerarius, who described a grip epidemic in Tübingen in 1718, mentioned a sleeping sickness (*Schlafkrankheit*) in connection with it. In 1768, Lepecq de la Cloture described a "coma somnolentum" after the grip, and Ozanann, who, in 1835, wrote a history of epidemic diseases, mentioned epidemics of "catarrhal fever" with "soporosité" as having occurred in Germany in 1745, in Lyons in 1800, and in Milan in 1802. Nona apparently was not observed during the influenza epidemic which swept this country in 1890, as it is not mentioned by Archibald Church[5] in his exhaustive article on the nervous complications and sequelae of the grip.

The present epidemic, like that of nona in 1890, first appeared in eastern Europe, in Austria, where the name "lethargic encephalitis" was given to it in 1917. Thence it spread westward, reaching France and England early in 1918, and this country in the fall of the same year. The etiologic relationship of this disease to influenza rests on the above described coincidence of the epidemics. It is not common for the individual patient to have had a clinically distinct influenza. The encephalitis may itself be a cerebral form of influenza, or it may be caused by a separate virus which in order to become active must have been in contact at one time or other with that of influenza. In none of the eleven cases which form the basis of the present paper had there been any definite preceding influenza. However, I have been impressed by the fact that nearly all of the patients whom I have seen had been in a more or less run down or exhausted condition prior to the onset, which condition may have predisposed to a localization of the virus in the brain. In this connection it is significant that the part of the brain chiefly involved, namely, the brain stem and basal ganglions, is particularly liable to be affected by poisons, whether exogenous or endogenous. It is this part of the brain which is most affected by gas poisoning and which is the seat of the sporadic poliencephalitis, particularly frequent in connection with alcoholism and other toxic states.

PATHOLOGY

I have had opportunity to make preliminary examination of the brains in two cases in which complete necropsies were performed. The two brains were very similar, the gross changes consisting of edema, congestion and minute hemorrhages, most numerous in the brain stem, basal ganglions and centrum ovale. The histologic changes are also similar in the two cases and are mainly found in the basal ganglions and brain stem down to the upper part of the bulb. They consist principally of dense accumulations of mononuclear cells around the vessels and of small hemorrhages. There is little evidence of necrosis or of extensive tissue destruction, in which respect this disease differs from poliomyelitis. This distinction is in accord with the clinical fact that paralysis is a much more conspicuous symptom of poliomyelitis than of epidemic encephalitis. Little or no evidence of inflammation was found in the cortex or the meninges, but there has not yet been sufficient time for a systematic examination of the entire brains.

1. Sainton, P.: Presse méd. **26**: 487 (Sept. 23) 1918.
2. Economo: Wien. klin. Wchnschr., July 26, 1917.
3. Mauthner: Wien. med. Wchnschr. **40**: 962, 1890.
4. Longuet: Semaine méd. **12**: 275, 1892.
5. Church, Archibald: The Nervous Features and Sequences of la Grippe, Chicago M. Rec. **1**, 1891.

SYMPTOMATOLOGY

The onset was gradual, and the early symptoms were usually attributed to the preexisting exhausted or toxic state. I do not know of any case with such sudden onset of severe general infection together with paralysis or other pronounced cerebral symptoms as in poliomyelitis or meningitis. The first suggestive symptoms have usually been blurring of vision with more or less definite diplopia, together with progressive listlessness which, when pronounced, is called lethargy. The facies gradually becomes extremely characteristic with masklike, immobile features, half open eyes and a fixed, more or less puckered or distorted position of the mouth. There is not so much real sleep as is indicated by the sleepy expression of the patient. In fact, some of the patients actually suffer from insomnia, and the "lethargy" sometimes bears about the same relation to sleep as the compulsive laughter of the pseudobulbar paralysis patient does to a normal laugh; or as the calm and stoic facies of the actually irritable and peevish paralysis agitans patient does to true serenity. In other words, the lethargic appearance is only a sign of the involvement of the cerebral mechanism of expression, as part of a general affection of the whole tonus-regulating apparatus.

In severe cases the whole body becomes rigid and all movements slow and labored, the condition resembling both catatonia and advanced parkinsonian rigidity. There is a good imitation of the flexibilitas cerea of the cataleptic state, and any attempted movement is likely to result in a coarse tremor. Some patients have crises of coarse tremor or choreiform jerkings attended with profuse perspiration and weak, rapid pulse. In one case, otherwise not severe, coarse jerkings, almost choreiform in type, have become very troublesome, and it is an interesting observation that this disturbance has been temporarily controlled by scopolamin.

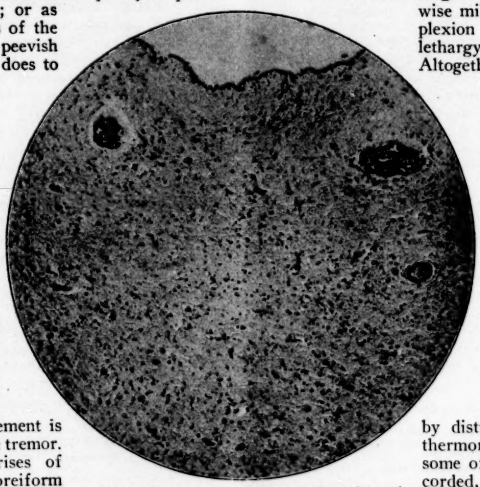

Fig. 1 (Case 2).—Left thalamus at floor of lateral ventricle: perivascular infiltration; × 80.

The frequently observed retention of urine and difficulty in speech and swallowing are probably in most cases part of the same type of disturbance which is due to affection of the above-mentioned tonus-controlling extrapyramidal motor apparatus. This apparatus, according to recent investigations, has its centers in the basal ganglions, which, as stated above, are among the favorite sites of the inflammatory changes in this disease. That the rigidity may exist without affection of the voluntary or pyramidal motor system is shown by the fact that the tendon reflexes, as well as the abdominal and plantar reflexes, may remain practically normal. True paralysis, even of the ocular and facial muscles, may be absent. It is possible to distinguish between the cases of principal involvement of the basal ganglions with the above-mentioned features, and cases with more pronounced pontine involvement, such as Case 1 in this paper. This patient had distinct external rectus and facial paralysis on the right side, and spastic paralysis with increased reflexes in the left arm and leg. In most cases we have a combination of the basal ganglions type and the pontine type, but it is always well to attempt to analyze the form of motor disturbance in the given case. The early tendency to ocular motor disturbance indicates primary involvement of the upper part of the brain stem around the aqueduct of Sylvius and the third ventricle. The fact that in cases of tumor and other circumscribed lesions in this region lethargy and somnolence are frequently mentioned has led previous observers to suspect the existence of a sleep center in this locality.

The early occurrence of the lethargy also points to its being a focal symptom rather than an expression of intoxication of the higher brain centers. In otherwise mild cases with good complexion and clear tongue, the lethargy may be very marked. Altogether it is safe to predict that careful study of the symptoms and lesions of this disease will help us to interpret many hitherto obscure symptoms, and throw a valuable side light on such affections as paralysis agitans, chorea, Wilson's disease and perhaps even dementia praecox.

Fever is usually present to a variable extent, but like the lethargy it need not always bear a direct relation to the amount of infection present and may even, to some extent, be caused by disturbance of the cerebral thermoregulatory apparatus. In some of the fatal cases here recorded, hyperpyrexia attended the ushering in of bulbar symptoms which caused death by respiratory paralysis. Anesthesias have not been seen, and headache and other pains have been inconspicuous. Consciousness is usually retained nearly to the end, though all forms of expression of it may be nearly abolished.

LABORATORY TESTS

The spinal fluid was always clear, sometimes under increased pressure, and usually showed a slight increase in globulin. The cell count was less than 10 in six cases, 10 in one, 25 in one and 26 in one. The cells were mononuclear. Results of cultures of blood and spinal fluid, both during life and after death, were negative. No bacteria were seen in sections of the brain. Leukopenia was observed in only one case; slight leukocytosis was observed more frequently.

REPORT OF CASES

CASE 1.—*History.*—A girl, aged 9 years, referred by Dr. Bayard Holmes, Feb. 3, 1919, had been noticed by her mother to be cross eyed, Dec. 27, 1918, but this condition was not constant until January 12. On the following day, she was

examined by an ophthalmologist, who found paralysis of the right external rectus. January 15, unsteadiness of gait was noticed, and on the 16th, she had difficulty in holding objects in the left hand. Within the next week, the left arm became paralyzed and, February 1, difficulty in swallowing set in. Indistinctness of speech was first noted about January 20. February 3, the patient was able to walk with aid into my office, but was weak and unsteady. She was admitted to the Presbyterian Hospital on the same day.

Examination.—The patient could walk with a little support, but dragged the left leg. The pupils, eyegrounds and visual fields were normal. Horizontal nystagmus was present. There was paralysis of the external rectus of the right eye. The facial muscles were weak on both sides, more on the right. The patient puckered the lips poorly and could not whistle. The tongue on protrusion deviated to the left. The neck was not rigid. The left arm was completely paralyzed, and there was loss of movement of the left toes and ankle. The tendon reflexes were markedly increased on the left side, and a left Babinski sign was present. Sensation was normal. The speech was slurred and almost unintelligible.

Lumbar puncture yielded a clear fluid with negative Wassermann test, while the Nonne-Apelt globulin test was weakly positive. The cell count was 4. The Lange colloidal gold test gave a rather strong reaction (2343321100).

The blood gave a weakly positive Wassermann reaction, as did the blood of the mother; but there were none of the ordinary symptoms of congenital syphilis.

Clinical Course.—During the following twelve days, the temperature every day ranged between 99 and 100, and the pulse rate was usually between 90 and 100. The leukocyte count was 7,100, February 4, and 9,250, February 8. For some days, the patient improved considerably in regard to talking and swallowing, but February 8 the speech again became very indistinct. The paralysis remained unchanged, and the ankle clonus and the Babinski sign were constantly obtained on the left side. The abdominal reflexes were absent. At noon, February 14, she suddenly developed respiratory difficulties and signs of pulmonary edema. At 7 p. m. she improved, but four hours later, the condition grew worse, and she died at 1 a. m., February 15. Necropsy was refused.

Fig. 2 (Case 2).—Corpus striatum: perivascular infiltration and diffuse inflammation; × 65.

CASE 2.—*History.*—A married woman, aged 34, who had borne eight children and who was now in the sixth month of pregnancy, seen, Feb. 10, 1919, with Dr. Paul Kelly, about three weeks previously had become listless and complained of fatigue and headache. There had been some nausea but no vomiting. About February 1, she grew worse, was somewhat excitable for a few days, and then became dull and drowsy, with staring eyes, and talked very little. When admitted to the Swedish Covenant Hospital, February 9, the temperature was 99.4, pulse 110, and respiration 34. On the following day the temperature ranged from 98.8 to 100; the pulse, from 114 to 122. Her face had a dull expression and there was slight facial palsy on the right side. The protrusion of the tongue was weak. The back was somewhat rigid. The tendon reflexes in the left arm and leg were stronger than those of the right side, but there was no rigidity of the extremities. The pupils and eyegrounds were normal. Sensation was normal. Mentally the patient was dull, slightly confused and disoriented for time. She grew worse. February 12, the temperature rose to 102, and on the 13th it ranged from 103.2 to 105.6, with a pulse rate of 140 to 150. Toward evening, she developed a marked respiratory difficulty with signs of pulmonary edema, and died.

Necropsy.—This was held, eleven hours after death, by Dr. B. O. Raulston, who made the anatomic diagnosis of: Marked edema and hyperemia of the lungs; hyperemia and cloudy swelling of the heart muscle, liver and kidneys; marked generalized cyanosis; pregnant uterus—about the seventh month. Extensive petechial hemorrhages in the visceral pleura, the epicardium, the renal pelves, the urinary bladder and the stomach, in both the mother and the fetus; mild tracheitis and bronchitis; acute hyperplasia of the spleen; edema and hyperemia of the brain; blood-stained, frothy fluid in the mouth and nose; mild atheromatous sclerosis of the aorta; slight edema of the ankles; edema and bluish discoloration of the external genitalia; lactating mammary glands; redundant sigmoid; cholelithiasis; healed calcified tuberculous tracheobronchial lymphadenitis; fenestrated thebesian valve and membranous eustachian valve; retrocecal appendix.

After formaldehyd hardening of the brain, the pia showed marked congestion and engorgement of the veins, but there was no exudation. The brain itself was distinctly edematous, as shown by the even, semicircular outline of the cut surfaces after formaldehyd hardening. The gyri were swollen and flattened, and the sulci narrow and compressed. The cut surfaces showed marked congestion, especially in the white matter of the centrum ovale and the basal ganglions. Minute hemorrhages were made out in these regions, as well as in the upper part of the pons. In the cerebellum the congestion was relatively less striking. The ventricles and their ependyma were of normal appearance.

Sections from the congested portion of the white matter of the left frontal lobe showed marked distention of the vessels, particularly the veins, but there were only very small lymphocytic infiltrations around some of the smallest vessels. In only a few places were any extravasations of blood to be seen, and these were of small size. The number of leukocytes in the lumen of the congested vessels was small with the exception of one small vein, cut longitudinally, which contained a fresh thrombus consisting of shadows of red cells and leukocytes, about half of which were observed to be polymorphonuclear.

In the left motor cortex the pia was very loose in texture, with slight increase in cells, and there was no definite sign of inflammation in the cortex itself.

The left optic thalamus showed very extensive inflammation, with large collections of mononuclear cells about the distended vessels, large and small (Fig. 1). No large hemorrhages were seen. In the right corpus striatum a similar condition prevailed (Fig. 2).

Sections made at three levels of the pons all showed very marked inflammatory change which was most pronounced in the dorsal portion (Fig. 3). Throughout the pons, small hemorrhages were numerous. The largest one encountered is shown in Figure 4.

Sections of the bulb, made at two levels, failed to show any inflammatory changes.

No organisms were found in sections from the regions mentioned, stained by the Gram-Weigert method.

CASE 3.—*History.*—A girl, aged 13 years, first seen, February 14, with Dr. L. W. Sauer, had complained, February 1, of buzzing in the ears and soreness in the jaws, so that

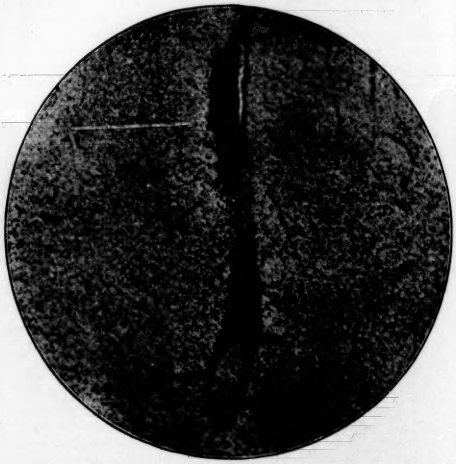

Fig. 3 (Case 2).—Pons: round cell infiltration and hemorrhage about vessel cut longitudinally; × 54.

mumps was at first suspected. A few days later, the eyes and throat became red; the temperature rose to 102, February 10, and influenza was suspected. The patient had no headache, and was unusually drowsy toward evening. The leukocyte count, February 11, was 12,200, and February 13, 11,800. February 11, the tongue seemed thick and the speech became indistinct. There began to be difficulty in swallowing on the 13th.

Examination.—The patient was very drowsy and listless, with immobile face and a peculiar fixed puckering of the lips, which persisted. There was slight bilateral facial weakness. The tendon reflexes were increased, more so in the left leg, and there was suggestion of a left Babinski sign. Lumbar puncture was made, and although there was considerable difficulty in entering the canal, the patient seemed to pay no attention. The fluid was under normal pressure, with a slight accidental admixture of blood. A second puncture yielded a clear fluid with the cell count of 7. No organisms were obtained in smears or cultures. Blood cultures were also negative.

Clinical Course.—The patient was taken to the Evanston hospital the same day and gradually grew worse, with increasing rigidity of the entire body. Nystagmus became a marked feature. From February 17 on she was unable to swallow and had to be fed by nasal tube. The temperature during the first week in the hospital ranged from 99 to 100 and the pulse from 100 to 120, but on February 20 the temperature reached 101.2 and on the 23d, 103. The lethargy was more pronounced, but consciousness was retained. On the 23d a left Babinski sign was obtained, and the left extremities were more rigid than the right. The abdominal reflexes were present. During the following two weeks there was very little change. The temperature was practically always between 100 and 101, and the pulse between 120 and 140. The head was constantly kept turned to the right. Every day the patient had attacks of jerkings in the extremities, together with profuse perspiration and usually some irregularity of the pulse. She could not talk, swallow or open the mouth, but seemed to understand everything and followed an object with her eyes. The muscular rigidity resembled that of a cataleptic state and could be somewhat overcome by passive movement.

For the first two weeks she had to be catheterized, and during this time constipation was so extreme that even nine drops of croton oil and enemas were unsuccessful. Later the urine was voided involuntarily, and the bowels readily moved by enema.

CASE 4.—*History.*—A married woman, aged 44, seen with Dr. Rufus Stolp, Feb. 15, 1919, had always enjoyed good health; but early in January she had some indisposition with fever for which, however, she did not consult a physician. She never was quite well from this time on, and after the middle of January she gradually grew listless, weak and unsteady, with a tendency to stiffness of the extremities and dragging of the right foot in walking.

Examination.—When seen, February 15, the patient was sitting in a chair with an absolutely listless, expressionless facial appearance, the eyes being half closed. She was clear mentally, but volunteered no remarks and answered questions only in monosyllables. The temperature was normal, but the pulse rate was 132. In addition to partial ptosis, there evidently was decided weakness of the facial muscles on both sides. The shutting of the left eye was particularly weak; otherwise there was no definite paralysis. The arms and legs were moderately stiff, the stiffness being more pronounced on the right side. The tendon reflexes were practically normal, and there was no Babinski sign. When a lumbar puncture was made, the patient was utterly indifferent and gave no expression of any discomfort. The fluid was clear and under normal pressure.

Laboratory Tests.—The Wassermann test with the blood was weakly positive with the cholesterinized antigens. The spinal fluid gave a negative Wassermann test, cell count 9, and very weakly positive Nonne-Apelt globulin test and Lange coloidal gold test (1221110000).

Dr. Stolp kindly informed me that the patient's condition at first remained unchanged, then grew slowly worse with increasing stiffness of the extremities and coarse jerkings on attempted movement. There was no special difficulty in

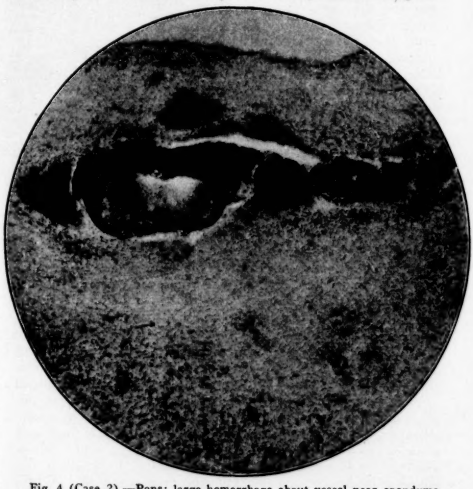

Fig. 4 (Case 2).—Pons: large hemorrhage about vessel near ependyma of fourth ventricle; × 60.

talking or swallowing. The bowels were obstinately constipated; February 21, retention of urine set in. February 23, when broth was fed to her with a spoon, she suddenly choked. Up to this time she had been clear mentally and had talked fairly well. She rapidly developed signs of pulmonary edema, and died in two hours.

Necropsy.—This was held four hours after death by Dr. B. O. Raulston, who made the anatomic diagnosis of edema and hyperemia of the brain; moderate edema and hyeremia of the lungs; hyperemia of the liver, spleen and kidneys; petechial hemorrhages in the visceral pleura, the epicardium,

Fig. 5 (Case 4).—Corpus striatum: infiltration of mononuclear cells around distended vein; × 280.

the lining of the stomach and renal pelves; moderate reddening of the lining of the trachea and main bronchi; atheromatous patches in the lining of the abdominal portion of the aorta; small cysts of the left ovary.

After formaldehyd hardening of the brain, the meninges showed no changes except hyperemia. The general appearance of edema was present. Considerable hyperemia was apparent on the cut surfaces, especially in the region of the basal ganglions and the pons. The subthalamic region was the one most affected. The cerebellum showed no marked change.

Histologic examination of the frontal and parietal lobes detected no signs of inflammation in the pia or the cortex. In the occipital lobe there was slight lymphocytic increase in places, but no distinct infiltrations. In the sulci the pia and adjacent cortex were very edematous. The optic thalamus showed distended vessels surrounded by accumulations of mononuclear cells. The lenticular nucleus showed distinct but less intense inflammation (Fig. 5). The crus cerebri showed a much more intense inflammation, with very large and numerous cell infiltrations (Fig. 6). The midbrain at the anterior end of the aqueduct also showed marked inflammation (Fig. 7). Throughout the pons, especially the dorsal portion, there were intense congestion, hemorrhagic areas and perivascular infiltrations, but the latter were less conspicuous than in the midbrain and basal ganglions. In the bulb, well marked congestion and inflammation were present, especially dorsally, in the region of the vagus nuclei (Fig 8). No bacteria were seen in sections stained by the Gram-Weigert method.

CASE 5.—*History.*—A man, aged 40, admitted to the Presbyterian Hospital, Feb. 20, 1919, from his home in Iowa, had begun, February 9, to complain of diplopia, which lasted only two days, but he felt ill and on the 14th summoned a physician, who found that his temperature was 103. It was 102 on the 15th and 101.6 on the 16th. On that day, stiffness in the fingers of the left hand and slight difficulty in talking were noted. On the 17th the temperature was normal, but the patient developed retention of urine, and stiffness in the jaws and in the fingers of the right hand. There was no headache nor other pain. He had not been constantly confined to bed until admitted to the hospital.

Examination on Admittance.—The patient was listless and very quiet, but clear. He kept the eyes half closed and did not volunteer any conversation or movement. The neck was quite stiff; the pupils and eyegrounds were normal; there was no ocular paralysis. There was apparently bilateral facial weakness, as the eyes could not be firmly closed or the teeth shown, nor could the patient whistle. The jaw was stiff, but with great effort the patient could separate the teeth about 3 cm. In biting, the muscles of mastication seemed to be weak. The tongue was tremulous and could not be protruded beyond the lips; there was no atrophy. The arms and legs were rigid, more so on the left side, but they could be fairly well relaxed by passive movements. The patient could move all the extremities but did so very slowly, with apparently great effort, and in a jerky manner, the effort resembling that of a catatonic patient. There was a constant tendency to hold the finger tips close together and slightly overlapping, with partial flexion at all joints. When he folded his arms on his chest they showed coarse jerkings, and when he sat up with the arms across the chest he was able to raise the head only a few inches. With the aid of the hands he could sit up, but the effort resulted in a coarse tremor in the muscles of the arms, trunk and the left leg. All of the tendon reflexes were moderately increased, without clonus. The plantar and abdominal reflexes were normal. Sensation was normal.

Lumbar puncture revealed a clear fluid under moderately increased pressure. The Wassermann test was negative. The cell count was twenty-six (mononuclear cells). The Nonne-Apelt globulin test was weakly positive; the Lange colloidal gold test gave a weak reaction (0112111000). The Wassermann test with the blood was also negative.

Blood examination revealed: hemoglobin, 80 per cent.; red cells, 3,840,000; white cells, 9,200.

Clinical Course.—During the following days the general rigidity and tendency to jerkiness on any attempted movement increased. There was a typical "cog wheel" resistance on passive movement of the elbows. The patient remained

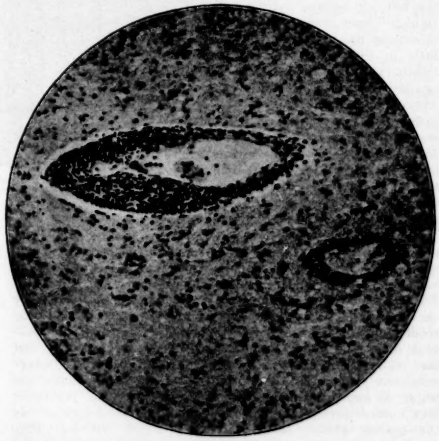

Fig. 6 (Case 4).—Right crus cerebri: dense perivascular cell infiltrations; × 60.

clear but extremely listless. The speech became more unintelligible, but he had no difficulty in swallowing until a few days before death.

Though the stupor increased, the patient did not sleep well, waking up frequently during the night. February 24, drooling became marked and the breathing labored, but

examination of the chest was negative. Perspiration became profuse and an extensive sudaminal rash appeared. After March 1, catheterization was not necessary, as the urine was voided involuntarily. A second lumbar puncture, March 3, also yielded a clear fluid, with a cell count of 20, and weakly positive Nonne and Lange tests. Cultures of blood and spinal fluid were made by Dr. Ruth Tunnicliff both by aerobic and anaerobic methods, but no growth was obtained. From February 20 to the 24th the temperature varied from 98 to 100.6 F., but from that time on it gradually rose, reaching 102, February 28, 104, March 2, 105, March 6, and 107, 6 a. m. March 8. The pulse rate showed a corresponding increase, being generally 120 until March 2, and after that from 120 to 140. The respirations showed similar behavior and were from 36 to 48 a minute after March 1. After March 4 there were frequent attacks of dyspnea and choking. In the afternoon of March 8 the pulse became imperceptible, the respirations very shallow and cyanosis marked. The patient died at 5:30 p. m. Necropsy was refused.

CASE 6.—*History.*—A married woman, aged 42, seen Feb. 24, 1919, with Dr. Yorke B. Sutch, previously had been well except for migraine. Her husband had influenza in October, 1918, but she escaped. At Christmas time she began to complain of occasional tinnitus; otherwise she was well until about February 1, when she consulted Dr. Sutch on account of shortness of breath and a rapid pulse. She went to bed the next day, and for a few days the temperature went up to 102. Then indistinctness of speech and difficulty in swallowing set in. The temperature was rarely above 100, but the pulse rate was from 110 to 120. She perspired considerably at night, and occasionally complained of pain in the left calf; and the left leg became a little rigid. There was marked tremor in the tongue and a little in the hands. From February 8 on, she had to be catheterized every day. February 15, lumbar puncture was made. The fluid was clear, under normal pressure. It contained 25 lymphocytes per cubic millimeter, and gave a positive Nonne globulin test and an almost negative Lange test. The Wassermann test was negative with both blood and spinal fluid.

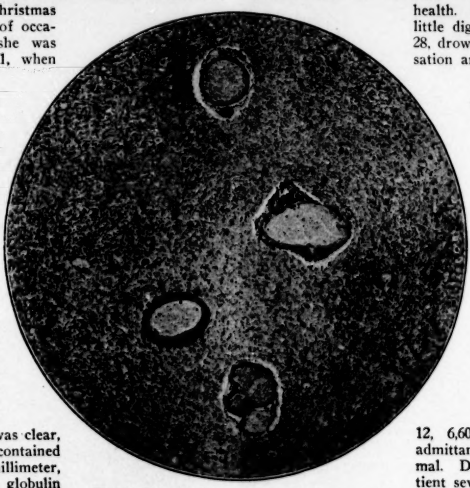

Fig. 7 (Case 4).—Midbrain near oculomotor nuclei: cell infiltration about the engorged vessels; × 60.

Examination.—When I saw the patient, February 24, the temperature was 99.6, pulse 110, respiration 38. She was clear mentally. There was no distinct ocular palsy, but movements of the eyes could apparently be made only with great effort. There was weakness of the facial muscles of both sides, more on the right. The tongue was tremulous and could be protruded only a short distance. There was considerable general muscular rigidity, most marked in the left leg; but the tendon reflexes were normal as well as the plantar reflexes. Sensation was normal. Within a few days she began to improve. Swallowing became better and the urine was voided normally. The most troublesome symptom was the coarse, almost choreic jerkings in the left leg. This condition always yielded temporarily to hypodermics of scopolamin. The temperature remained below 99, but the pulse rate at the time of the last communication from Dr. Sutch, March 17, continued to be rapid, up to 120.

CASE 7.—An unmarried woman, aged 34, seen at the Evanston hospital, March 11, 1919, with Dr. Rufus Stolp, ten days previously had felt feverish and complained of double vision. On the 8th she had made a trip to Chicago to have her eyes examined. On admittance to the hospital on the 11th, the temperature was 99.6, pulse 80, respiration 24. She was conscious, but very lethargic and with a dull facial expression. There was no definite ocular palsy, but the eye movements were slow. The eyegrounds were normal; there was no nystagmus. There was only slight rigidity of the neck and arms, but the legs were very decidedly rigid. They showed only slight increase in the tendon reflexes and normal plantar reflexes. The abdominal reflex was not obtained in the left lower quadrant, and was weak in the other quadrants. Sensation was normal.

The spinal fluid gave a negative Wassermann test but showed slight increase in globulin. No cell count was made.

March 12, the lethargy was more marked and the arms and neck were more rigid. The temperature ranged from 98 to 101. The patient had to be catheterized nearly every day and grew duller and stiffer until March 16. When examined on that day, she was considerably brighter, and the rigidity in the legs was diminished and that in the arms was very slight. The tendon reflexes were normal.

CASE 8.—A man, aged 62, seen, March 13, 1919, with Dr. E. F. Wells, for ten years had shown symptoms of intermittent claudication of the legs, but otherwise had been in good health. Early in January, he had a little digestive disturbance. January 28, drowsiness set in, with dizzy sensation and slight unsteadiness. The eyes became sensitive to light, and on February 5, lateral diplopia appeared which lasted one day and later recurred at times. He also complained of slight respiratory distress, a little trouble in talking, drooling and, during the last two days, incontinence of urine. He had not been confined to his bed prior to admittance to St. Luke's Hospital, March 10. March 11, lumbar puncture revealed the fluid clear, Wassermann test negative, globulin test positive, cell count 4. The blood gave a negative Wassermann reaction. March 10, there was a leukocyte count of 4,800 and on March 12, 6,600. The temperature after admittance to the hospital was normal. During the interview, the patient several times saw double when looking to the right. He appeared alert and talked freely. The abdominal reflexes and the left knee and ankle reflexes were not obtained. The arm reflexes were normal. There was no definite paralysis. Sensation was normal.

March 22, Dr. Wells reported that the patient had become somewhat dull mentally, and that his legs had grown weaker. Otherwise, no new symptoms had developed.

CASE 9.—A married woman, aged 34, seen at the Evanston hospital, March 12, 1919, with Dr. C. A. Aldrich, was said to have been somewhat anemic but otherwise well until March 3, when she felt weak and developed retention of the urine. She had a smothering sensation, and the eyes were sensitive to light. The temperature during the following days ranged from 99.4 to 100.4. The leukocyte count was 8,800. She generelly lay with the eyes half closed, and spoke only to answer questions. Blueness of the fingers was noted after the third day.

When the patient was examined, March 12, she was dull and drowsy, but answered questions without any special difficulty. The jaw was rather stiff, and the teeth could not be separated more than 2 cm. The neck was also slightly stiff, but the head could be turned about without pain. The knee and ankle reflexes were weak. The elbow reflexes were not obtained; the wrist reflexes were elicited only on the

left side; the plantar reflexes were normal. The temperature was 101.

When seen again, March 16, the patient was brighter and showed no rigidity, but felt too tired to sit up long enough to try to urinate, and still had to be catheterized every day. The temperature since the 12th had usually been 99.5. Both wrist reflexes were now obtained as well as the right elbow reflex. The tendon reflexes in the legs were normal.

Case 10 presents both features of encephalitis and a confusional psychosis.

CASE 10.—A man, aged 39, seen at the Caledonia (Minn.) hospital, March 6, 1919, with Dr. W. S. Browning, two and a half weeks previously, when feeling tired and nervous, had left his home in Illinois for a visit in Minnesota. After a few days, he became more tired, said he had no energy, and complained of poor sleep. He began to complain of backache and blurring vision: he said he could see better with one eye closed. February 26, he became confused and irrational. He was admitted to the hospital, March 2, with temperature 103, pulse 70, and respiration 16. From that time on the temperature gradually declined, and was 99.6, March 6. Most of the time he was in a state of muttering delirium and talked continually. On the morning of March 6, he was less delirious but rather drowsy.

When examined in the afternoon, March 6, he answered questions fairly promptly, but was disoriented as to time and place. There was no speech disturbance, but a slight weakness of the left external rectus was present. There was no other cranial nerve palsy. The strength in the extremities was good, and there was no rigidity. The right abdominal reflex was not obtained. The wrist, elbow, knee and plantar reflexes were normal; the ankle reflexes were moderately increased. Lumbar puncture yielded a clear fluid with negative Wassermann reaction, cell count 9, and Nonne globulin test weakly positive. The Lange gold test gave a weak but distinct reaction (0122110000).

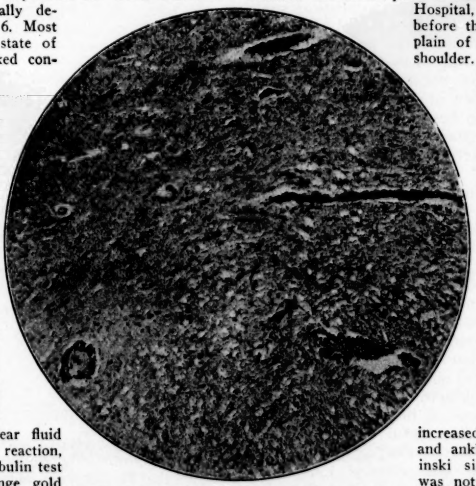

Fig. 8 (Case 4).—Lower bulb: perivascular infiltrations; × 90.

March 18, Dr. Browning reported that the patient's general condition had somewhat improved. His orientation was good. There was no more diplopia, but slight unilateral facial paralysis existed. The maximum daily temperature was 100. The patient was still inclined to be somnolent, but could easily be aroused.

Case 11 differs from the others by the absence of somnolence after the first few weeks, and the presence of violent choreiform jerking limited to one extremity.

CASE 11.—A woman, aged 33, seen, March 9, 1919, with Dr. W. K. Harrison, about January 20, after having felt tired for a week, had been suddenly taken ill with sore throat and fever, her temperature reaching 103. January 21, she became extremely drowsy, and on the next day delirious, giving voice to many absurd delusions, among them the idea that her left leg was not her own but belonged to her niece. During the first week, blisters containing bloody fluid appeared on both heels. By the middle of February the fever and somnolence subsided, and the chief trouble from now on consisted of irregular, jerky movements in the left lower extremity, beginning in the toes and involving the whole limb after three or four days. The movements ceased entirely during sleep. Headache, visual disturbances and sphincter disturbances were absent.

March 10, she was admitted to my service at the Presbyterian Hospital.

Neurologic examination was practically negative, except for continuous choreic movements of large amplitude in the left leg. On making lumbar puncture, a clear fluid under moderately increased pressure was obtained. It gave a cell count of 10, a weakly positive Nonne-Apelt globulin test, and a weak colloidal gold reaction (1222110000). During the following ten days the choreic movements became less severe. Scopolamin hydrobromate and sodium cacodylate were administered.

While none of the previous patients gives a history of a definite attack of influenza, such a history was obtained in Case 12, which, however, is not one of the lethargic, or brain stem, type of encephalitis but of the hemispheral variety.

CASE 12.—A boy, aged 14 years, had had an attack of influenza one month prior to admittance to the Presbyterian Hospital, Dec. 5, 1918. Ten days before this date, he began to complain of pain in the left arm and shoulder. When he came to the hospital it was found that his temperature was 101, and a diagnosis of a second attack of influenza was made. The attack was mild, and on December 11 he was transferred to my service on account of the trouble with the left arm, which had grown a little better during his stay in the influenza ward. He showed no somnolence. The right pupil was larger than the left; there was no external ocular or other cranial nerve palsy. The movements of the fingers of the left hand were relatively weak; the strength in both legs was good. The tendon reflexes were increased in the left leg, with knee and ankle clonus and positive Babinski sign. The abdominal reflex was not obtained on the left side. The wrist and elbow reflexes were not obtained on the left side. The spinal fluid was entirely normal. The cell count was 5, globulin negative. The condition of the patient rapidly improved, and he was discharged, recovered, January 19.

30 North Michigan Avenue.

Polyneuritis on a Cooked Lean Meat Diet.—Voegtlin and Lake of the United States Public Health Service have conducted some experiments with animals to study the nutritive value of meat subjected to the temperatures ordinarily used in cooking with reference to producing polyneuritis on account of the destruction of the antineuritic vitamin. Polyneuritis was produced in cats and dogs as the result of an exclusive dietary of lean beef which was heated for three hours at 120 C. in the presence of alkali (sodium carbonate). The symptoms produced were those characteristic of beriberi. Administration of the antineuritic substance of yeast was followed by the prompt disappearance of the symptoms. Exposure of the beef for three hours to a temperature of 120 C. without the previous addition of the alkali does not completely destroy the antineuritic power of this food. It is therefore concluded that the ordinary preparation of meat for human consumption does not lessen its food value in this respect.

INFLUENZA OCCURRING IN PREGNANT WOMEN

A STATISTICAL STUDY OF THIRTEEN HUNDRED AND FIFTY CASES *

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BALTIMORE

In the latter part of October, 1918, when the epidemic of influenza was at its peak in this locality, the seriousness of the disease as seen in pregnant women caused considerable alarm among those in charge of obstetric cases. It soon became apparent that there was a great diversity of experience as regards the mortality, some of the practitioners losing most of their cases, others very few. In addition to its importance in contributing toward a more definite knowledge concerning the prognosis of influenza in pregnant women, it has seemed to me that a statistical study based on a large number of cases would also be of value in showing the effect of the influenza on the course of pregnancy. Owing to its severity and wide occurrence, and to the fact that it was especially prevalent among young women of the child-bearing age, the epidemic offered the best opportunity we have perhaps ever had to study the extent to which the progress of pregnancy is interfered with by an acute, severe, infectious disease.

With these purposes in view, a questionnaire was prepared which included data as to race and age of the individual patient, the month of pregnancy, character of the attack (whether mild or severe, and whether complicated by pneumonia), recovery or death of the mother, and whether or not pregnancy was interrupted. Copies of this blank were sent to all of the physicians of the state of Maryland, and also to the members of the American Gynecological Society, the American Association of Gynecologists and Obstetricians, and the local obstetric societies in four of the larger cities. I wish here to express my appreciation of the ready response on the part of the physicians who replied, and of the careful manner in which they supplied the information desired.

Of the total number of cases returned, 1,350 were reported in full detail, and it is on these that our statistics have been based. Other cases were reported but were not used, owing to incompleteness of the data in some particular respect. Of the 1,350 cases, 971 were from the state of Maryland, and hence the great majority occurred under the same general conditions. In race the patients were predominantly white, the proportion being 1,266 white, eighty-two negro, and two Japanese. Since in most instances the duration of pregnancy was expressed in calendar months, the same method has been followed in this paper.

The results of this study are given herewith in the form of a series of tables in which the statistics are presented so as to show their relation to the various aspects of our problem. By a comparative study of these tables important data are revealed, both as regards the course of influenza in pregnant women and the effect of the influenza on the course of pregnancy. No conclusions can be drawn, however, as to whether the incidence of influenza is greater among pregnant women than among nonpregnant women or men of the same age. This question cannot be determined until we have reliable statistical data concerning influenza in general. Our own figures show only what happened in this group of 1,350 patients.

TABLE 1.—INCIDENCE OF PNEUMONIA AND PERCENTAGE OF MORTALITY IN CASES OF INFLUENZA REPORTED FOR THE DIFFERENT MONTHS OF PREGNANCY

Month of Pregnancy	Uncomplicated by Pneumonia			Complicated by Pneumonia				Total Cases	Gross Mortality
	No. of Cases	Recovered	Percentage of Mortality	No. of Cases	Recovered	Died	Percentage of Mortality		
1	12	12	0	2	1	1	50	14	7
2	53	53	0	31	17	14	45	84	17
3	58	58	0	68	32	36	53	126	28
4	79	79	0	79	41	38	48	158	24
5	58	58	0	94	51	43	46	152	28
6	94	94	0	88	43	45	51	182	25
7	121	121	0	114	47	67	59	235	29
8	151	151	0	109	45	64	59	260	25
9	46	46	0	93	36	57	61	139	41
Total	672	672	0	678	313	365	54	1,350	27

As regards the course and prognosis of influenza in pregnant women, we may draw certain general conclusions from Table 1. Our first observation is that about one half of all the patients developed pneumonia, and of these about 50 per cent. died, giving a gross mortality of 27 per cent. In those developing pneumonia, the mortality was somewhat higher in the last three months of pregnancy. From Table 1 it will be seen that the largest number of cases were reported for the sixth, seventh and eighth months, and fewer from the third to the fifth months. As to the first two months, we must assume that in many instances the existence of pregnancy was not suspected by the attending physician, and thus such cases would not be included in the reports. On the other hand, we may well reason that cases from the later months were likely to be reported, pregnancy being then more obvious. This would explain the larger number of

TABLE 2.—FREQUENCY OF INTERRUPTION OF PREGNANCY IN CASES IN WHICH INFLUENZA WAS UNCOMPLICATED BY PNEUMONIA

Month of Pregnancy	Total Cases	Pregnancy Uninterrupted	Pregnancy Interrupted	Percentage Interruption
1.	12	8	4	33
2.	53	27	26	49
3.	58	40	18	31
4.	79	55	24	30
5.	58	46	12	21
6.	94	81	13	14
7.	121	95	26	21
8.	151	108	43	28
Total	626	460	166	26

TABLE 3.—FREQUENCY OF INTERRUPTION OF PREGNANCY IN CASES IN WHICH INFLUENZA WAS COMPLICATED BY PNEUMONIA

Month of Pregnancy	Total Cases	Pregnancy Uninterrupted	Pregnancy Interrupted	Percentage Interruption
1.	2	0	2	100
2.	31	7	24	77
3.	68	29	39	57
4.	79	43	36	46
5.	94	59	35	37
6.	88	47	41	46
7.	114	57	57	50
8.	109	41	68	62
Total	585	283	302	52

*From the Johns Hopkins Hospital and Carnegie Laboratory of Embryology.

cases reported for that time. We may safely conclude that the individual is no more susceptible to the disease at any one month of pregnancy than at another.

As regards mortality, the percentage is distinctly higher in the last three months of pregnancy. Sixty per cent. of the cases developing pneumonia in those months proved fatal; in the ninth month it reached its highest point, 61 per cent. When considered as gross mortality the percentage is reduced somewhat, owing to the large number of cases reported for this period.

The effect of influenza on the course of pregnancy is shown in Tables 2, 3 and 4, in which the frequency of coincident abortion or premature birth is tabulated according to the severity of the influenza. In the 626 cases uncomplicated by pneumonia the pregnancy was interrupted in 26 per cent., the ratio being somewhat higher in the first three months. This figure is not greatly in excess of the frequency one would expect under ordinary conditions. Moreover, it is to be remembered that many of these abortions might have occurred in the absence of the disease, or at least that the disease may have served only as a terminal factor in bringing about the abortion of an ovum already pathologic. In the cases complicated by pneumonia, the frequency of interruption of pregnancy is doubled, being 52 per cent. in 585 cases. If we disregard the first two months, the percentage is still higher, termination of pregnancy occurring in 62 per cent. of 308 cases. In view of the popular opinion that the presence of influenzal pneumonia nearly always causes an interruption of pregnancy, it is of interest to note the surprising fact that in 38 per cent. of the fatal cases cases the patients died without interruption of pregnancy. This would indicate that when the ovum and the placentation are normal, an extremely severe disturbance in the condition of the mother may be required in order to bring about the termination of pregnancy.

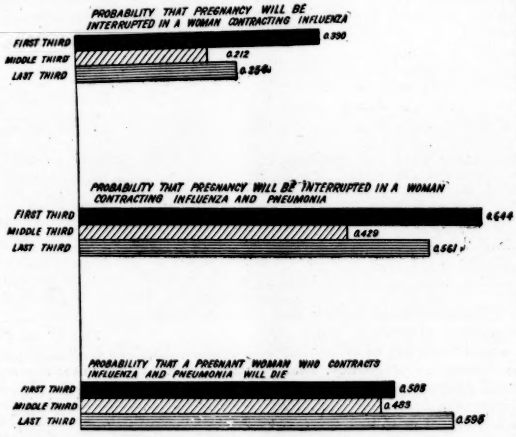
TABLE 4.—FREQUENCY OF INTERRUPTION OF PREGNANCY IN FATAL CASES

Month of Pregnancy	Number of Deaths Reported	Pregnancy Uninterrupted		Pregnancy Interrupted	
		No.	Per Cent.	No.	Per Cent.
1	1	...	..	1	100
2	14	5	36	9	64
3	36	10	28	26	72
4	38	13	34	25	66
5	43	21	49	22	51
6	45	20	44	25	56
7	67	28	42	39	58
8	64	20	31	44	69
Total	308	117	38	191	62

TABLE 5.—RELATION OF INTERRUPTION OF PREGNANCY TO MORTALITY

Month of Pregnancy	Pregnancy Not Interrupted			Pregnancy Interrupted		
	Cases	Deaths	Percentage of Mortality	Cases	Deaths	Percentage of Mortality
1	8	..	..	6	1	17
2	34	5	15	50	9	18
3	69	10	15	57	26	46
4	98	13	13	60	25	41
5	105	21	20	47	22	47
6	128	20	16	54	25	46
7	152	28	18	83	39	47
8	149	20	13	111	44	40
Total	743	117	16	468	191	41

The reverse of Table 4 is presented in Table 5, in which the data are so arranged as to show the effect of abortion and premature labor on the incidence of mortality. In 743 patients in whom pregnancy was not interrupted, there was a mortality of 16 per cent. In 468 cases in which there was termination of pregnancy, the mortality was 41 per cent. This distinctly higher percentage is consistent throughout the different stages of pregnancy with the exception of the first two months; but, as already pointed out, the number of cases in those months is too small to warrant any definite conclusions. It is plainly evident that the interruption of pregnancy renders the prognosis more grave. If we restrict our data to the cases that were complicated by pneumonia, it is found that in the 383 cases in which pregnancy was not interrupted, the mortality was 41 per cent.; whereas in 395 cases in which pregnancy was interrupted there was a mortality of 63 per cent.



Probabilities with respect to pregnant women contracting influenza or influenzal pneumonia.

It may be of interest to present the same statistics in another form, which has certain advantages from the point of view of accurate comparisons. One can calculate the mathematical probability of certain types of occurrence in the general "universe of discourse" comprehended by these statistics. By elementary theory of probability, it is known that if an event may happen only in one or the other of two ways, a and b, and in n trials it actually happens m times in one particular way, a, then the probability (p) of its occurrence in that way may be thus expressed: $p = \frac{m}{n}$, and the probability (q) of its occurrence in the other way, b, would be expressed $q = 1 - p$.

Applying this principle to the present statistics, and grouping the material, we get the results shown in Tables 6, 7 and 8, and in the chart, which have been

prepared for me through the kindness of Dr. Raymond Pearl of the School of Hygiene and Public Health.

From these tables we note that, so far as may be judged from the present statistics, the chances of the interruption of pregnancy are about doubled if the woman contracts both influenza and pneumonia, over what they are if she has influenza alone. It is the general impression of obstetricians that normally, and without known complications, the chance is about 1:5

TABLE 6.—DEGREE OF PROBABILITY THAT THE PREGNANCY OF A WOMAN WHO CONTRACTS INFLUENZA UNCOMPLICATED BY PNEUMONIA WILL BE INTERRUPTED

If the Influenza Attack Is in the:	Probability of Interruption	Chance of Interruption Is One in:
First third of pregnancy	0.390 ± 0.03	2.6
Middle third of pregnancy	0.212 ± 0.018	4.7
Seventh and eighth months of pregnancy	0.254 ± 0.018	3.9

that pregnancy will be interrupted. The data in Table 6 indicate that the normal chance of the interruption of pregnancy is not greatly increased by the presence of influenza alone. The chance of death from influenza complicated by pneumonia is obviously greatly increased by the interruption of pregnancy.

As this paper was about to be submitted for publication, two others appeared, dealing with the statistical relation of influenza to pregnancy. Bland[1] reports 337 cases. In a study of 200 of these he gives a mortality of 49 per cent. This is somewhat higher than is yielded by our larger number of cases in which, as has been seen, we have a total mortality of 27 per cent. As to the effect of the disease on pregnancy, Bland reports the interruption of pregnancy in 58 per cent. of his cases, a figure considerably higher than that shown by our data, which is 39 per cent. in 1,211 cases falling within the first eight months.

TABLE 7.—DEGREE OF PROBABILITY THAT THE PREGNANCY OF A WOMAN WHO CONTRACTS INFLUENZA AND PNEUMONIA WILL BE INTERRUPTED

If the Influenza Attack Is in the:	Probability of Interruption	Chance of Interruption Is One in:
First third of pregnancy	0.644 ± 0.022	1.6
Middle third of pregnancy	0.429 ± 0.021	2.3
Seventh and eighth months of pregnancy	0.561 ± 0.022	1.8

Attention may also be called to the paper of Kosmak,[2] in which is given a summary of twenty-one hospital cases studied by him, in addition to several private cases. This author has kindly permitted me to use his data, and they are incorporated in the foregoing statistics.

TABLE 8.—DEGREE OF PROBABILITY THAT A PREGNANT WOMAN WHO CONTRACTS INFLUENZA AND PNEUMONIA WILL DIE

If the Influenza Attack Is in the:	Probability of Death	Chance of Death Is One in:
First third of pregnancy	0.505 ± 0.034	2.0
Middle third of pregnancy	0.483 ± 0.021	2.1
Last third of pregnancy and at term	0.595 ± 0.019	1.7

RESULTS OF THE STUDY

It is assumed that the 1,350 cases on which these statistics are based were serious enough to require medical attention, and do not include the very mild cases; nor do they include many of the cases falling within the first two months of pregnancy, when gestation might easily escape the knowledge of the physician. With these reservations, the results of the study are as follows:

1. Pneumonia complicated the influenza in about one half of the pregnant women here reported.

2. In the cases complicated by pneumonia, about 50 per cent. of the patients died, the mortality being somewhat greater during the last three months of pregnancy.

3. The gross mortality of all cases was 27 per cent.

4. Pregnancy was interrupted in 26 per cent. of the uncomplicated cases, and in 52 per cent. of the cases accompanied by pneumonia. In the cases ending fatally, abortion or premature labor occurred in 62 per cent. Thus, in 38 per cent. of the fatal cases the patient died without interruption of pregnancy.

5. The mortality of influenza was considerably higher (41 per cent.) in the cases complicated by abortion or premature labor than in those in which pregnancy was uninterrupted (16 per cent.).

1. Bland, P. B.: Influenza in Its Relation to Pregnancy and Labor, Am. J. Obst. **79**: 184, 1919.
2. Kosmak, G. W.: The Occurrence of Epidemic Influenza in Pregnancy, Am. J. Obst. **79**: 238, 1919.

INFLUENZA IN A NEWLY BORN INFANT

REPORT OF A CASE

ISAAC A. ABT, M.D.
CHICAGO

Through the kindness of Dr. David S. Hillis of the Chicago Lying-In Hospital, I was permitted to examine a newly born infant whose mother showed symptoms of influenza one day previous to labor. In order to make clear the condition of the baby, I will include the history of the mother's illness, furnished by Dr. Hillis.

REPORT OF CASE

History.—Mrs. J., aged 26, a primipara, developed symptoms of influenza late in the afternoon of December 27, when she was within two weeks of term. The symptoms were cough, fever, chilliness, headache and backache, with much soreness in the chest. She had had no sleep during the night.

Labor pains were first noticed at 6 a. m., December 28. Influenza symptoms continued. At 2:30 p. m. the temperature was 101.2 and the patient was in active labor. The fetal heart tones were more rapid than usual, being 150 throughout labor, but they were always regular and not of a character to indicate mechanical disturbance of fetal circulation. Labor continued normally, and at 12:30 a. m., December 29 the bag of waters appeared at the vulva and was artificially ruptured. The liquor amnii was markedly stained with meconium. At 12:46 there was spontaneous delivery of a boy, whose weight was 6 pounds, 12 ounces.

The infant's skin became grayish blue almost immediately after birth, and this condition persisted in spite of vigorous crying and clear air passages. The baby seemed vigorous at birth and breathed promptly after delivery. Auscultation of the baby's chest ten minutes after birth revealed many fine moist râles in both lungs, but there was no dulness on percussion. The following day, December 29, at 10 a. m., the baby was put to the breast and nursed well. Shortly after this, however, the breathing became labored and rapid. At 11 p. m. of this day, the respiration rate was 120. The temperature was not high, never exceeding 100, and falling to 97 F. The baby became more and more cyanotic. Respirations were superficial and rapid. Occasionally the infant uttered a weak cry.

The examination of the baby's blood made on the day before death showed a white count of 21,450 with a few

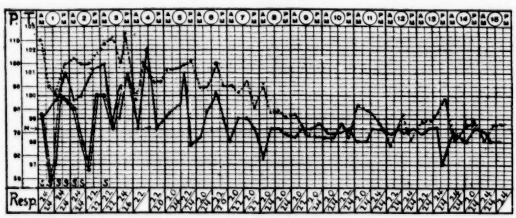
nucleated red and some large, pale white cells, not classified. The differential count was: polymorphonuclears, 58 per cent.; lymphocytes, large and small, 35 per cent.; large mononuclears, 2.8 per cent., and eosinophils, none.

December 31, the third day of the baby's life, finely crepitant râles were diffusely distributed over both lungs. Cyanosis was marked, and dyspnea extreme. The baby died at 6:05 p. m. with well marked symptoms of bronchopneumonia.

Necropsy.—The following day opening of the thorax revealed minute hemorrhages into the pericardium. The heart muscles were flabby and gave evidence of a parenchymatous myocarditis. On exa.nining the heart valves, one could plainly see a beginning of acute verrucose endocarditis, involving the cusps of the tricuspid valve. Both lungs showed confluent areas of hemorrhagic bronchopneumonia. The spleen gave evidence of an acute splenitis with some edema and passive hyperemia. The kidneys showed no gross pathologic change, and the liver gave the appearaces of cloudy swelling.

Prof. F. Robert Zeit of the Northwestern University Medical School, Chicago, examined the tissues and organs, and reported that "the cultures made from the organs of the baby which were submitted for examination showed many colonies of streptococci. Those made from the lungs showed in addition to the streptococci, which were present in large numbers, a few colonies of *Staphylococcus aureus* and *albus*. Cultures made from the spleen showed a few colonies of *Staphylococcus aureus* and *albus* and many colonies of streptococci. The examination of the organs shows: (1) lung: capillary bronchitis; (2) kidney: glomerulonephritis and necrosis (septic); (3) spleen: acute septic splenitis." Professor Zeit concluded that the cause of death was a streptococcus septicemia.

Subsequent History of Mother.—The mother had a mild course of influenza without obstetric or other complications, and left the hospital fully recovered, Jan. 13, 1919.



Pulse (dotted line), temperature (solid line) and respirations of mother after delivery of child; and temperature (double line) of infant after birth; *S, S,* stools of infant.

SUMMARY AND CONCLUSIONS

1. The obstetrician's report indicates that the baby was born prematurely, owing to a maternal influenza.
2. At birth the baby presented symptoms of respiratory infection.
3. The symptoms grew rapidly and progressively worse, leading to the death of the infant on the third day.
4. The necropsy revealed a widely disseminated infection, with minute hemorrhages and a hemorrhagic bronchopneumonia, as well as a septic endocarditis.
5. Streptococci were obtained abundantly from all of the organs examined.
6. We must assume that the baby became infected before birth.

Pain.—Pain is the oldest defense reaction, and potentially painful stimuli are the basis of all primitive reflexes. It is therefore of importance for higher development that these impulses should be rendered less effective in favor of those impressions which lead to more general and discriminative response. But, although they are controlled and even abolished, the mechanism underlying the production of pain must remain in full, physiologic activity, ready to play its part, should occasion arise, in the defense of the body against noxious influences.—Henry Head.

PANDEMIC INFLUENZA IN KOREA

WITH SPECIAL REFERENCE TO ITS ETIOLOGY

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AND
H. C. CYNN, M.B.
SEOUL, KOREA

The great influenza pandemic made its appearance in Korea during the month of September, 1918. There seems to be no doubt that the infection came from Europe, via Siberia. The disease spread from north to south along the line of the Southern Manchurian Railway. The first cases seen by us in Seoul, the capital, were during the latter part of September. Before the middle of October the epidemic was at its height. The insanitary conditions of oriental life greatly enhanced the spread of the infection. At present it is impossible to estimate either the number of cases or deaths, as accurate information has not been received from the Japanese authorities. From one quarter to one half of the population must have been affected. Most of the schools were closed, owing to the high incidence among the scholars and teachers. As elsewhere the serious nature of the outbreak was due to the frequent sequelae, bronchitis, bronchopneumonia and heart failure. The symptoms were those of ordinary influenza, but of a more exaggerated type. Headache, and pains and aches in the limbs, with a rapid rise of temperature to 104 or 105 were common symptoms. The temperature usually dropped to slightly above normal within twenty-four hours if the case was uncomplicated. There was also frequent evidence of respiratory infection, which varied from a mild coryza to pneumonia in severity. In some cases there was vomiting and nausea, while in some very acute cases the patient became delirious at the climax of the infection. The symptoms in general corresponded with those reported from other countries.

With regard to transmission of the disease, everything would point to droplet infection as being of paramount importance. Numbers of mild carrier cases, a population of susceptible people, and a disease infecting the upper respiratory passages, causing a prolific secretion of infectious material, produce a combination which must result in a pandemic or widely spread epidemic.

While the number of cases reported are few, the bacteriologic findings are of considerable interest. All were typical cases.

Blood cultures were made from seven patients, and all proved negative.

The sputum was examined in fourteen cases, in three of which the acute symptoms had subsided before this was done. Direct smears were made to bring out the small and lightly staining influenza bacillus. After

microscopic examination, a small specimen of the sputum was washed and plated out on blood agar.

Of the fourteen specimens examined, only three showed the presence of Pfeiffer's bacillus. Two of these three cases were complicated with pneumonia. The other eleven cases showed a variety of organisms. Pneumococci prevailed in three, almost pure *Micrococcus catarrhalis* in one, and the others gave a variety of streptococci, gram-negative and gram-positive, diplococci, etc. In two cases a diphtheroid bacillus greatly predominated.

We wish to draw special attention to three particularly interesting cases:

REPORT OF CASES

Case 1.—A man had a typical attack of influenza with no complications. About one month previous to the attack the sputum showed a pure culture of influenza bacilli. The patient had been suffering months from chronic bronchitis. A vaccine was prepared and the patient had received two or three injections of it. Two or three days prior to the attack, the patient, being at that time quite free from influenza, brought a sample of his sputum to the laboratory for further examination. This showed an almost pure culture of the influenza bacillus. Sixty hours later the patient was down with typical influenza. The same patient, about two weeks previously, when receiving an injection of influenza bacillus vaccine, stated that his wife and one child were very sick with epidemic influenza, and asked whether it would be possible for him to become infected. I replied that it was more than likely that the present infection and the vaccine would protect him. This patient, whose sputum at times was teeming with the influenza bacillus, had been living with his family for weeks without introducing infection, but to epidemic influenza all succumbed.

Here is a clear-cut case of a person who had carried, and was still carrying, an influenza bacillus infection, and furthermore had received three injections of vaccine (Pfeiffer's bacillus), becoming infected and suffering from an acute attack of epidemic influenza. Had the sputum in this case been examined at the time of attack, only, the case would have been reported as "influenza due to Pfeiffer's bacillus." Some may question whether the organism isolated was the true Pfeiffer bacillus. All we can say is that it possessed all the characteristics of this organism, and was identical with those isolated from other cases.

Case 2.—S., about six weeks before the attack of epidemic influenza, had suffered from acute coryza. Bacteriologic examination of the discharge showed pure growth of a small, irregular, gram-positive bacillus, a sort of diphtheroid. At this time there were no symptoms of influenza. The case was one of simple coryza. Later when the patient suffered from influenza, pronounced coryza developed. This again showed the same small diphtheroid bacillus. The mild laryngitis which developed simultaneously gave a growth of pneumococci.

Case 3.—C. had suffered nine months previously from bronchitis due to the pneumococcus (type not determined). Vaccine treatment had greatly helped the patient, and for six months there had been practically no sputum. After recovery from the acute symptoms of epidemic influenza, a pneumococcal bronchitis remained. It is, of course, impossible to know whether the organism from the first infection had been carried over or not. Vaccine treatment again helped much in clearing up the bronchitis.

EVIDENCE FOR AND AGAINST THE PFEIFFER BACILLUS

It is still questionable whether Pfeiffer's bacillus can be considered as the specific cause of the present pandemic. An endeavor will be made to present evidence both for and against the Pfeiffer bacillus.

Evidence Against the Pfeiffer Bacillus.—1. The highly contagious nature of this disease, frequently spreading, as it does, with lightning-like rapidity, presupposes a virus present in large quantities even in very small specimens of the infected sputum. This we do not find to be the case, assuming Pfeiffer's bacillus to be the cause of the disease.

2. The bacillus is isolated in a comparatively small percentage of cases.

3. The disease attacked one who was at the time infected with Pfeiffer's bacillus.

4. There is an absence of marked antibodies to this bacillus except in cases in which the bacillus has been isolated.

Evidence for the Pfeiffer Bacillus.—1. Pfeiffer's bacillus is found more frequently than any other organism.

2. There is no evidence supporting the theory of an ultramicroscopic cause.

In connection with the question of etiology it seems to us that two mistakes have been made: first, in considering Pfeiffer's bacillus as the specific cause for the disease known to the clinician as influenza, when there is evidence to support the view that clinical influenza may be produced by the pneumococcus or certain strains of streptococci, that is, if we ignore the view of a filtrable virus and believe the disease due to visible organisms only, and second, by following the clinicians too readily in calling the disease "influenza," before the influenza bacillus had been found consistently enough to warrant such a pronouncement.

The clinician has a right to apply the name influenza to the disease, because he has arbitrarily decided on such nomenclature for such symptoms; but the bacteriologist must follow slowly. Influenza to him is a specific infection due to the Pfeiffer bacillus. We think the advance in this case has been unjustifiably rapid.

Looking over a group of twenty sputum specimens which were cultivated on blood agar for the purpose of making vaccines, we find that eight showed the presence of Pfeiffer's bacillus, five in almost pure culture and three mixed. These cases were clinically influenza, coryza, bronchitis and asthma. The cultures were made during the winter of 1917-1918. We mention the fact first to show that out here among the natives and the foreigners, infection with the Pfeiffer bacillus is common. However, the point we really want to make is this, that since before the epidemic came the influenza bacillus was a common parasite in respiratory infections, may it not be true that some other organism plays now the rôle of primary infection, while the presence of the influenza bacillus and of the pneumococcus so frequently found is due to the frequency with which these organisms are carried?

The so-called hog cholera bacillus, while found in almost all cases of hog cholera, has no etiologic relationship to the disease, the cause being a filtrable virus.

TRANSMISSION EXPERIMENTS WITH FILTRATES

The experiments here recorded do not lend support to the idea of a filtrable virus. The experiments, although few in number, were carried out on human beings and are therefore of some significance:

Experiment 1.—Blood from two typical cases of influenza was collected in citrate, immediately centrifuged, and the supernatant fluid filtered through a Berkefeld "N" filter. Owing to a lack of enthusiasm among the experimentists the

filtrates had to be mixed, and 1 c.c. of each was given to a Korean physician intravenously. The unfiltered bloods were also mixed and a Korean and one of us (F. W. S.) each received 1 c.c. of the pooled blood. The two patients from whom the blood was taken had been sick about twenty-four hours. They were quite prostrated and showed typical symptoms. The temperature of one was 104 and of the other 101. The temperature did not rise higher in either case.

Results.—The experiment, we fear, means little. We were of course all exposed to the infection. The Korean physician who received the filtrate came down with influenza on the third day. He was very sick for almost a week. The senior author, who had taken the unfiltered blood, came down with influenza in forty-eight hours. The attack was slight, although typical. The nasal secretions, which were profuse, gave a pure culture of a diphtheroid bacillus. From the laryngeal secretion an almost pure pneumococcus culture was obtained. The Korean physician suffered from an acute bronchitis for about two weeks, but the influenza bacillus was not isolated. The Korean man who also received the unfiltered blood admitted afterward that he had just recovered from an attack of influenza. Nothing developed in him.

EXPERIMENT 2.—Two students who had not had the disease were each given 2 c.c. of filtered blood from a typical case. The results were negative.

EXPERIMENT 3.—The sputum from another case was taken and thoroughly shaken with saline until a uniform suspension was made. This was not now centrifuged to remove the coarser material, and the supernatant fluid was filtered. Cultures of the filtrate were sterile. Two more healthy students were each given 2 c.c. intravenously.

Results.—Both of the students were made definitely ill within three quarters of an hour after the injection. They reported chills, vomiting, rapid pulse, headache and pains. All symptoms gradually subsided, and within six hours the students had practically recovered. Apparently they suffered from an acute toxemia.

The sputum used in this experiment did not show any influenza bacilli, but gave a mixed growth, the most prevalent colony being a rather large, moist, grayish white, opaque colony. This organism was seen on other plates. It is not *Micrococcus catarrhalis,* although somewhat similar in morphology.

EXPERIMENT 4.—This was similar to the preceding experiment except that the sputum came from a different case. One man only was given 2 c.c. of the sputum filtrate: no results followed.

In all cases the filter used was a Berkefeld "N."

While these experiments are very limited, they would seem to show that the virus, if present in the sputum, is not capable of passing through a Berkefeld "N" filter candle. Also, if present in the blood, the evidence is against its passage through the filter, as only one out of four who received the filtrate developed the disease. With the epidemic raging, and the possibilities of natural infection so numerous, that one among the four men used should succumb to natural infection was most probable cannot be denied. Having passed through the dangers of the epidemic, as well as the fiery trials of the experiments, the subjects considered themselves as very refractory.

SERUM REACTIONS

Complement Fixation Test.—Samples of blood were taken from four patients who had recently recovered (within one week) from acute influenza, and four samples from normal persons. The antigen consisted of a saline suspension of influenza bacilli. After many tests with these bloods it was decided that the antigen was unsatisfactory. A slight increase of antigen caused the negatives to become positive, while in a working strength good positive results could not be obtained with the supposedly positive serums. There did appear to be a slightly greater tendency to fixation of complement on the part of those who had been infected. However, in one instance the blood of a negative patient, that is, of a person who had not had influenza, gave as good fixation of complement as the best positive among the patients' serums.

Agglutination Tests.—Microscopic tests were made on the bloods used in complement fixation. The results were of the same nature; while the patients' serums seemed to agglutinate slightly more than the normal serums, the result was not definite enough to be significant.

Skin Test.—A heavy suspension of influenza bacilli was shaken and extracted in distilled water for two days. The bacteria were then removed by filtration, and the filtrate was used. A class of fifteen students was injected, 0.05 c.c. being given intracutaneously. Within twenty-four hours a definite reaction occurred in all students. There seemed to be no difference between those who had been infected and had recovered and the immunes, or those who were at the time convalescing.

Animal Inoculation.—Four guinea-pigs were inoculated intraperitoneally with the pooled blood and pooled filtrate from two acute cases of influenza, two pigs each receiving 2 c.c. of the pooled Berkefeld filtrate, the remaining two each receiving 2 c.c. of the pooled blood. Night and morning temperatures were taken daily for two weeks; nothing abnormal was recorded.

CONCLUSIONS

Definite conclusions cannot be drawn from such limited work, but the results of our work and those of many others seem to indicate that:

1. The etiology of pandemic influenza remains unknown.
2. Much more evidence is needed to establish the relationship of Pfeiffer's bacillus to the infection.
3. Further experiments with both filtered blood and secretions are necessary in order to determine the possibility for filtrable virus.

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PULMONARY TUBERCULOSIS AT CAMP CODY, NEW MEXICO

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The first patient with tuberculosis entered the base hospital, Sept. 14, 1917. Of the cases observed up to Jan. 14, 1919, 114 have been diagnosed tuberculosis, all pulmonary, except one carpal bone, two glandular, two hip and two vertebral. One of the hip patients had active lung findings. No tuberculous respiratory lesion is reported by the examiners in the others of the latter group.

With the exception of four recruits and five civilians, all have had service varying from two days to five years. Seventy-one men served six months or less, and 108 less than one year. The youngest was 18 years of age and the oldest 45; twenty-one were from 18 to 20; eighty-three were in the third decade of life, eight in the fourth and two in the fifth.

These patients belong to the white race except one Filipino and one Indian. Most of them came from Iowa (twenty-three), Nebraska (seventeen), Minnesota (ten), Illinois (seven), Texas (seven), Missouri (six) and Oklahoma (six).

OCCUPATION

In these states, the most actively agricultural of all in America, the highest number came from the rural districts, as the occupation of farming led with thirty-nine. Mechanics numbered eighteen, clerks fourteen, cooks seven, students six, carpenters six, common

laborers five, other outdoor vocations ten, and other indoor vocations nine. These figures seem to contradict the belief that sedentary life is more predisposing to the development of tuberculosis than open air pursuits. The reason for this apparent discrepancy is that more men in this camp arrived from the country than from the towns and cities. On the other hand, the figures convince us that tuberculosis is more or less common in those subject to the physical strain, though engaged in the open. Moreover, some indoor occupations prove to be a rest cure for lesions of a few patients, so limited as to produce no untoward symptoms. Similar lesions in those enduring severe labor might be disastrous before a physician is consulted.

FAMILY HISTORY

According to information available, the family history was not really valuable in the study of the cases, for it was negative in eighty-one. In the family history of the other cases, the disease had this incidence: The fathers of eight patients had pulmonary tuberculosis; the mothers of six; the brothers (one each) of three; the sisters (one each) of three; the fathers and mothers of two; the two sisters of one; the father and brother of two; the father, sister and two brothers of one, and the paternal grandparents and father of one.

PREVIOUS PERSONAL HISTORY

The previous personal history, when intelligently given, often reveals the beginning of the tuberculosis, even months or years before the patient suspected anything wrong. The onset in quite a high percentage of cases occurs in some nontuberculous pathologic condition of the respiratory tract which reduces what immunity the patient may have against tuberculosis. Of the series written up in this report, 48 per cent. gave such a previous history. Eighteen per cent. of them had pneumonia; 5 per cent., bronchopneumonia; 10 per cent., measles; 8 per cent., influenza, or so-called la grippe; 2 per cent., bronchitis; 5 per cent., tonsillitis; 6 per cent., pleurisy, and 9 per cent., frequent and protracted colds. Pleurisy and colds lasting six weeks or more were found to be greatly significant.

Of the 114 patients, nineteen had spitting of bloody sputum; two, hemoptysis; thirty-six, chronic cough; eight, blood-free expectoration; forty-four, afternoon rise of temperature; twenty-eight, loss of weight, and twenty-two, night sweats. Four stated that the appetite was extraordinary. Not infrequently toxemia was not apparent, since fever was found absent and digestion undisturbed by a full diet. In two cases of activity, the patients declared that health was always perfect. Thirty-eight gave a negative personal history. One ascribed the cause of tuberculosis to aspiration of a pen point which later was coughed up.

HISTORY OF PRESENT ILLNESS

It is interesting to note the duration of illness as given by tuberculous patients. On inquiry it was found to be from one day to fifteen years. The symptoms of coughing, expectoration, hemoptysis, loss of weight and strength, night sweats, dyspnea, hoarseness, and pain in the chest were relied on in the history of the present illness. Some of the symptoms were more common than others and were usually considered by the patient only slightly if at all deserving attention, namely, chronic cough, tiring easily, afternoon fever (only sixteen reported any fever), and pains in chest.

DIAGNOSIS AND GROSS PATHOLOGY

Pleuritic pains, blood spitting, and sputum associated with frequent persistent colds were valued by the examiner as highly important in the diagnosis. A history of this character, with definite physical findings, made the diagnosis reasonably certain. If, in addition, tubercle bacilli were found in the sputum, the case was considered typical. The findings in about 50 per cent. of the cases in this hospital pointed to a condition of fibrosis, there being present such signs as impaired resonance, increased voice transmission, and abnormal breathing, as bronchial, bronchovesicular, harsh breathing or prolonged expiration. In a few subjects the fibrosis was so extensive that retraction was quite noticeable. In these the breath sounds were more or less suppressed.

This pathologic condition seemed to have its origin most frequently in an upper lobe. If it extended to a lower lobe, the evidence showed great damage done above, with extensive infiltration. The right upper lobe was involved alone in fourteen cases, the left upper lobe in six, both upper lobes in seven, the right upper and lower lobes in four, other right upper groupings in five, other left upper groupings in three, upper bilateral and a lower in three, right lower alone in nineteen, left lower in fifteen, right middle in six, lower bilateral in four, entire right lung in eight, entire left in five, both lungs in four, miliary tuberculosis in four, and no demonstrable focus in two. Because of the tendency of the disease to advance from above downward, this fact was particularly recognized when confusion in the diagnosis arose in the postinfluenzal chest. The showers of constant moist râles in the basal lobe of the lung were not considered significant unless associated with findings of tuberculosis in an upper lobe.

GENERAL OBSERVATIONS

Nearly 50 per cent. of the entire number of patients had an active lesion, for most of them had persistent subcrepitant râles after expiratory cough, some had constant crepitant râles, and a few had both. In two cases, d'Espine's sign was present, three had no physical signs except showers of localized, persistent, moist râles, and two had no evidence whatever except the positive sputum.

In our series here only 5 per cent. had morning rise of temperature, and less than 50 per cent. afternoon fever. The morning pulse was commonly slow, even down to 50. In the afternoon it varied from 64, the lowest, to 130, the highest. It was our observation that, contrary to the teachings of many, the pulse is usually slow in tuberculosis. This was probably due to the almost complete rest cure treatment of those having fever or an acute lesion, exercise being confined to getting about in the ward and on the porches.

DISPOSITION

It was found that seventy-eight had tuberculosis prior to entering federal service. The remaining thirty-six were in the line of duty at the onset of the disease. Forty-four were discharged on a certificate of disability (fifteen one sixth and one one eighth); forty-nine were sent to the Army General Hospital, Fort Bayard, N. M., and three to Army General Hospital Number 21, Denver, for observation and treatment. Nine men were returned to duty. Three so!-

diers and three civilians died in this hospital within a short time after admission. The other two civilians left the hospital.

LABORATORY WORK

The laboratory work consisted of sputum examinations, blood counts, and the making of roentgenograms (in obscure cases of hilum tuberculosis and extensive fibrosis without definite physical findings). The sputum in twenty-one cases was positive for tubercle bacilli. The method used was repeated daily examinations of morning specimens. The white blood count had a variation of from 3,800 to 19,000. Of striking interest is the fact that not in a single instance were bacilli found in disease of the lower lobes unless associated with pathologic change in an upper lobe, as shown in the accompanying table. Two of the patients had subcrepitant râles only in the right apex, unaccompanied by fever. Four others had absence of afternoon rise of temperature.

SUMMARY

1. In the cases studied, 114 patients had tuberculosis. Seventy-one had served less than six months when first considered unfit for active service.

2. Physical strain may either make an acute process more active or reactivate a healed lesion.

LOBES INVOLVED IN TWENTY-ONE CASES SHOWING POSITIVE SPUTUM

	Number	Temperature	Pulse
Right upper	9	99 to 103.8	70 to 130
Left upper	1	98.2 to 99.2	60 to 80
Both upper	1	98.6	72 to 88
Both upper and right base	1	99.2 to 102.4	84 to 112
Both upper and left lower	3	98.4 to 100.6	72 to 96
Left upper and both lower	1	99 to 102.6	76 to 116
Left upper and hilum	1	98.6	68 to 72
All lobes	2	97 to 98.6	60 to 97
No localization	2	97.4 to 100	72 to 104

3. Family history is of slight value as compared with the previous personal records. Some nontuberculous respiratory disease most commonly appears in the latter.

4. Some patients with active tuberculosis may feel perfectly well, not having any symptoms whatever, no cough, no fever, etc. A severe symptom, as hemoptysis, may be the first warning. A widespread involvement of the lung up to this time may exist without the patient's knowledge.

5. The history of cough, loss of strength and weight, afternoon fever, increased pulse rate and night sweats is of less importance, in the early diagnosis, than that of pleurisy, blood spitting, excessive expectoration, and frequent colds lasting six weeks or longer. Associated with this, the most significant physical finding is that of localized showers of persistent, moist râles after expiratory cough.

6. Pulmonary tuberculosis usually takes a general route from apex or upper lobe downward, and in advanced cases to the opposite side. This should be kept in mind in the differential diagnosis of pulmonary tuberculosis from the influenzal sequelae.

Diet of the Nations at War.—In the diet of nations at war there is a profusion of vegetables, more than in peace time, that contain minerals, roughage and vitamins freely. Go where you will, in the United Kingdom, France, Germany, Switzerland or Holland, one finds the diet of the people today rougher, coarser and containing more vegetables and less concentrated foodstuffs than in peace time.—A. E. Taylor, "War Bread."

LETHARGIC ENCEPHALITIS

PRELIMINARY REPORT

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The special article and editorial on "Epidemic or Lethargic Encephalitis," [1] which recently appeared in THE JOURNAL, prompt me to report the following cases:

CASE 1.—*History.*—In October, 1918, I was asked to examine a little girl, aged 6 years, suffering from a rather unusual group of symptoms. It seemed that the illness had begun as a mild, febrile disturbance, accompanied by flitting neuralgic pains about the face and other portions of the body. Within forty-eight hours the unusual symptoms developed, which prompted the attending physician to seek counsel. According to his account, the little one had lapsed into a strange state of mental apathy, from which she could hardly be roused; she would not take food, and would not talk voluntarily or answer questions. The bladder and bowels moved involuntarily, and the whole mental picture was one of sluggishness and lethargy. Another unusual feature of the case which attracted his attention was a tendency on the part of the child to maintain almost indefinitely a fixed position when placed in a definite attitude by the examiner, thus resembling very much the catatonic postures of dementia praecox.

Examination.—I found the general demeanor of the patient exactly as related by the physician. There were no neurologic symptoms worthy of mention, with the exception of a possible slight increase in the tendon reflexes of the left upper and lower extremities. The lethargy was very marked. The pupils were equal, regular, and responded promptly to light and distance. There was no apparent involvement of the ocular muscles. The temperature registered 99.4; the pulse, 100. The patient lay in an inert manner with the eyes open, and without moving a muscle. When some playful remark was addressed to her, a very faint suggestion of comprehension was displayed by the muscles of expression. She would not, however, answer questions. I placed her in odd and uncomfortable positions, and she would make no attempt to change to a natural or more comfortable one. This lethargic condition continued for about a week and then gradually cleared up. Within a period of three weeks a complete recovery was made, with the exception of a residuum of slight nervous irritability.

My opportunities for laboratory examinations in this case were almost nil; therefore I am unable to rule out definitely many conditions which must be considered in a case of this kind; but the complete recovery would tend to exclude tuberculous meningitis. The absence of rigidities and all classical evidences of meningitis would serve to disprove its presence, and negative Wassermann tests, obtained since recovery, help to exclude syphilis. On the other hand, the typical lethargic state unaccompanied by any great rise of temperature, together with the fixed postures, corresponds closely to the descriptions given us of lethargic encephalitis.

After examining, in a limited manner, this case, I felt justified in making a diagnosis of encephalitis; but at that time I was unaware of a disease entity of the encephalitic type which features lethargy as being the star symptom in a new syndrome.

Were it not for the fact that I am able to report a thoroughly investigated case which conforms more closely to the symptoms of the disease under consid-

1. Epidemic or Lethargic Encephalitis (Nona), special article, J. A. M. A. **72**: 794 (March 15) 1919; Epidemic or Lethargic Encephalitis, editorial, p. 796.

eration, I should have hesitated to make the fragmentary report just given; and my sole object in so doing is to substantiate if possible my belief that this type of illness has been present among us for some time and is not simply a recent development.

CASE 2.—*History.*—Miss M. H. of Radcliffe, Iowa, an unmarried Norwegian woman, aged 18, whose family, previous and menstrual histories were negative, developed a headache and fugacious pains about the face and body, Feb. 10, 1919, which persisted and annoyed her greatly for several days. If there was fever at all, during this time, it was not a prominent symptom. February 19, she consulted her family physician more especially because she could not fully open her eyes, as the result of a double ptosis which was sufficiently marked to prevent the physician from getting a good view of the pupils without holding up the eyelids. A record made at this time indicates that the pupils were equal but narrowly contracted, so much so that it was difficult to determine the reactions to light and distance. The temperature was 99.6, the pulse, 80. A vacant, immobile, expressionless cast of countenance was observed, and a blood count demonstrated only 8,000 leukocytes per cubic millimeter. February 22, it was observed that marked slowing or retardation of all bodily movements had developed. February 24, she became very lethargic, or apathetic, and would take nourishment only when repeatedly and strongly urged. On this date, also, catheterization had to be resorted to, and nystagmoid movements of the eyeballs were noted. February 25, these nystagmoid movements became more marked, being observed when the eyes were directed to either the extreme right or left. During all the time after she came under the observation of her physician, she could walk about, but walked in a very slow, rigid manner. In looking about the act was accomplished by turning the whole body rather than by rotation of the head on the shoulders. As this rigid, lethargic mental and physical attitude increased, it was noticed that she would assume and maintain awkward and unnatural postures, and if her extremities were placed in some strange attitude the posture would be maintained for long periods of time, as in catatonia. Two or more urinalyses, made by her physician before my examination, were entirely negative, and the temperature never exceeded 99.6.

Examination.—February 25, I found the patient to be a robust girl whose facial expression at first disappointed me because I had been led to believe that she was afflicted with a new disease, and I thought I would find, on examination, an ordinary case of dementia praecox. A few moments and some questioning, however, enabled me to determine that the mind, though lethargic, was not that of an insane or demented person. The temperature was 99.4, pulse 80, and respirations 22. The face was expressionless, masked and stolid; the eyes were unwinking; there were occasional nystagmoid jerks to the right or the left, even without being especially elicited. The patient responded to questions with perfect intelligence, after being spoken to repeatedly in a commanding manner. The olfactory sense was normal; the ocular fundi, negative; there was a very slight tendency to bilateral ptosis; the left external rectus was weak; the pupils were oval or irregular, moderately dilated, and responsive to light, distance and consensuality; the conjunctival and palate reflexes were normal; the facial movements were bilaterally and equally restricted, more especially in the movements of expression; the tongue protruded straight; the palate retracted straight; the neck was rigid, but the head was not retracted; marked resistance was noted when the head was passively rotated on the shoulders. Right finger to nose was normal, but the movement was accomplished slowly. Left finger to nose was slow and incoordinate, and was accomplished with a suggestion of coarse tremor involving the whole extremity. The grip of the right hand was normal; of the left hand, diminished. The entire left upper extremity was somewhat paretic. The triceps and supinator jerks were equal and apparently normal, those on the left side being possibly a trifle more brisk. The patellar reflexes were equal but somewhat too brisk. The Achilles reflexes were present and equal, but diminished. The abdominal reflexes were normal. None of the pathologic reflexes, such as the Babinski and Oppenheim phenomena, could be obtained. All types of sensibility appeared to be intact, over all portions of the body. The suggested ataxia of the left upper extremity may possibly have been due to muscular weakness. The heart and lungs were entirely negative, and no abnormalities of the abdominal or pelvic viscera could be detected. Special attention to the liver was given, because of the possibility of the presence of Wilson's disease.

When the patient was placed on her feet and asked to walk across the room, her gait and postures slightly resembled those of Parkinson's disease, with the exception that there was a tendency to stagger, much as one does with cerebellar disease. The head was held with the chin slightly elevated and to the right, with the left ear inclined a little toward the left shoulder. The right upper extremity was slightly abducted from the chest and flexed at the elbow, and the hand carried a little below the level of the groin. When commanded to look around, the patient turned the whole body rather than rotating the head on the shoulders.

Laboratory Investigations.—Blood count revealed: reds, 4,400,000; leukocytes, 7,000; hemoglobin, 80 per cent.; polymorphonuclears, 69 per cent.; lymphocytes, 24 per cent.; large mononuclears, 4.5 per cent.; eosinophils, 1.5 per cent.; transitionals, 2 per cent. Blood cultures were negative. Examination of the spinal fluid gave negative Wassermann tests in all dilutions; the globulin was not increased; there were 12 cells per cubic millimeter; smears were negative; aerobic and anaerobic cultures on glucose serum agar and blood agar were negative.

COMMENT

As this case indicates profound disturbance of the brain and cord, characterized in the beginning by bilateral ptosis, mild febrile reaction, and a state of physical and mental lethargy; and since the laboratory evidence corresponds exactly with that found in epidemic lethargic encephalitis, I feel justified in reporting the case under this diagnostic classification.

There are two or three matters which may be worthy of comment in connection with these reports. In the first place, there was no history of influenza in either of these cases, unless the mild febrile disturbance which ushered in the illness might be so interpreted. Then again, it is of interest to note the similarity that exists between the bodily lethargy in these cases and in Parkinson's disease. When one considers the pathology in both, it is only fair to assume that minute hemorrhagic areas in the corpus striatum, as observed in lethargic encephalitis, may produce the same symptoms as the degenerated areas in the same structures in Parkinson's disease. Another point of interest in connection with Case 2 is the fact that when lumbar puncture was made, and 20 c.c. of spinal fluid were removed, there was a marked improvement in the mental state of the patient, in that she volunteered several statements and asked about some of her jewelry which she had placed in a certain receptacle for safety. This voluntary conversation was the first in which she had indulged for at least five days prior to my examination.

A report just received from the physician in Case 2 is gratifying. The patient is now up and about, and has lost all evidences of mental sluggishness, and the restriction in her movements is hardly noticeable. The most interesting factor in connection with the case is the fact that from the moment the spinal puncture was made she began to make rapid improvement.

Every Typhoid Convalescent a Possible Carrier.—Consider every case that recovers from typhoid as a possible carrier, either continuous or intermittent, temporary or permanent.—*Weekly Bulletin, A. E. F.*

PHYSICAL SIGNS AND THEIR MECHANISM IN ACUTE PULMONARY INFLAMMATION

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The recent epidemic of acute respiratory inflammation with frequent occurrence of complicating pneumonia has aroused new interest in physical signs associated with the latter condition. This is especially true because of the conspicuous absence of rapid respiration and pulse in the early and moderate degrees of pneumonic involvement and the consequent necessity for careful physical examination. Given the familiar picture of fever, cyanosis, rapid respiration and pulse following an acute bronchial infection, one is reasonably certain of his ground before proceeding farther. Confronted, on the other hand, by a subject who presents moderate fever, who has a respiration rate of 20 to 25, and whose pulse is but moderately accelerated, careful investigation becomes a necessity before one feels assured he is dealing with the usual case of so-called influenza and that a complicating lobular pneumonia has not developed.

No attempt is made in the present paper to encroach on the domain of pathology. Since, however, accuracy of observation has been dependent on postmortem confirmation, some reference to gross pathology and the organs in situ cannot well be omitted. The common picture is that of a lobular pneumonia with tendency toward confluence in the dependent positions. Even in the severer types, however, consolidated patches are usually interspersed with small air-bearing areas. The lobes so involved are in great part firm and their size is increased. An extensive unilateral involvement may displace the heart toward the less involved side, and sometimes pushes the liver downward. Actual bulging of intercostal spaces has been observed in some instances. Especial mention is made of this displacement of organs by the inflamed lung because of the natural tendency to associate such a phenomenon with pleural effusion.

Selecting, for the sake of simplicity, a case from our series that presented a patch roughly 8 cm. in diameter at the left scapular angle, the physical signs recorded are: diminished vocal fremitus; slight percussion dulness; diminished intensity of breath sounds with slightly prolonged expiration; clear, distinct, whispered pectoriloquy; the spoken voice diminished in intensity, the quality altered and pitch raised, as compared with the normal lung; and persistent, localized, fine-bubbling râles.

With confluence of lobular areas eventuating in practically a lobar involvement, vocal fremitus has been found to be frequently diminished; the percussion note impaired, often low-pitched tympany rather than dulness being elicited, breath sounds suppressed or of a weak, bronchovesicular or bronchial character; whispered pectoriloquy clear but not always loud; the spoken voice elevated in pitch, altered in quality, and the intensity exhibiting a wide variation, in some cases being distinctly diminished, in others intensified.

That diminished vocal fremitus and vocal resonance in the presence of dulness and whispered pectoriloquy have been a frequent observation in the absence of any pleural exudate has been confirmed by antemortem roentgenoscopy and roentgenography and by postmortem section. In necropsies early in the epidemic and later during its crest, pleural effusion was exceptional. With the ebbing tide, pleural complications with pus formation have been more frequent. Lack of anything approaching uniformity in physical signs in clear-cut uncomplicated pneumonias has led us to despair of determining the onset of pleural effusion except by the aid of exploratory puncture. In other words, the physical signs of many confluent areas are apt to approach those of ordinary lobar pneumonia, in which the vocal fremitus and resonance are sometimes increased, at others diminished. Variations from the typical picture seem to be accounted for by persisting areas of air-bearing lung and also by the presence of a considerable amount of frothy moisture.

The presence of vocal fremitus and vocal resonance of normal or diminished intensity, in association with bronchial breathing and whispered pectoriloquy such as has frequently occurred in this epidemic (and as is commonly found in other forms of pulmonary consolidation, especially of an acute inflammatory type), is not often referred to in the literature except as combined with fluid in the pleural cavity. Some of the confusion regarding the vocal resonance has resulted from a failure to recognize differences between intensity of sound, on the one hand, and variations in quality and pitch, on the other. When the spoken sounds become less muffled than in health, higher pitched, clearer and closer to the ear, the auscultator must take special care to keep these features entirely distinct from that of simple loudness or intensity, which we believe many fail to do. Austin Flint clearly expressed this distinction, stating that "a concentrated, high-pitched sound, however feeble, is not less a sign of complete or considerable solidification of lung. In other words, intensity is not essential." And again, "increased intensity may cease when bronchophony occurs."

The frequent occurrence of normal or decreased vocal fremitus and resonance plus bronchial breathing and whispered pectoriloquy in cases of consolidation presents a striking contrast to the findings over the normal lung, where the vocal fremitus and resonance are normal in intensity, and bronchial breathing and whispered pectoriloquy are absent. It is plain that sounds of different pitch are not affected similarly in solid and normal lungs, so that any explanation must include one or more factors apart from simple conduction. The factor that we wish here to emphasize as being of great importance in clarifying the subject —one that has been slighted in the literature—is that of the response of the membranous tissue of the normal lung to vibrations included within a certain range of pitch, the result being the production of secondary vibrations, these vibrations being different from those occurring when sounds are transmitted by ordinary conduction, which affects sounds of all pitch alike. This special factor is alluded to by Austin Flint in contrasting the clear-cut sounds heard over a consolidated area with the muffled, humming quality of normal voice sounds, the latter modification being attributed to "secondary vibrations set up in the taut-drawn

elastic fibers of the alveolar walls, which blur the distinctness of the original sound waves."

In the comparatively simple case of the solid lung, sounds of varying pitch, after having once escaped from within the bronchial tubes, pass to the surface of the lung and chest wall, with no marked modification except that of diffusion, which acts alike on sounds of different pitch. While sounds of different pitch suffer diminution, they maintain to a great extent their relative degrees of intensity. With the normal lung, on the other hand, sounds of one pitch reach the chest surface well maintained, being even louder than in many cases in which the lung is solid; while sounds of another pitch, lost in the normal lung, become plainly audible in the solid lung.

In the normal lung tissue, then, in contrast to solid lung tissue, sounds of different pitch are affected differently. The lower pitched ones, such as those we can detect by palpation, arrive at the chest surface over a normal lung in a state of considerable intensity, being often more marked than vibrations over solid lung. The higher pitched vibrations, however, such as occur in bronchial breathing and whispered pectoriloquy, are lost under normal conditions. Those that are lost suffer from the natural obstructive features encountered in the normal lung as it exists in the body. These features are, first, the reflective action of the tense membranous tissues of the normal lung, and second, the reflective action of the chest wall as vibrations pass to it from the alveolar air immediately beneath, factors entirely additional to that of diffusion. The lower pitched vibrations, though they may be affected by the obstructive factors just mentioned, are influenced in addition by one or more other factors that are distinctly favorable to their transmission, tending to offset any deintensifying influences. These favorable factors do not modify the higher pitched vibrations of bronchial breathing and whispered pectoriloquy.

The point we wish to emphasize is that the lower pitched vibrations, but not the higher pitched ones, initiate, in our belief, secondary vibrations in the membranous tissues of the normal lung, much as one vibrating tuning fork may cause another tuning fork of proper pitch to vibrate, or as the voice of a patient may set the mattress into readily perceptible vibrations. The principle involved is different from that which is operative in simple conduction. These normal pulmonary membranes are of such tension and structure as to be set into secondary vibration chiefly by vibrations within a limited but rather wide range of pitch.

To repeat, then, these secondary vibrations, excited by the original relatively low-pitched vibrations coming from the upper respiratory tract, tend, in the normal lung, to neutralize the obstructive factors just mentioned, thereby furnishing vibrations plainly perceptible at the chest surface. The higher pitched vibrations in the normal lung, however, being unassisted by any such favorable factor as that present in association with secondary vibrations, encounter the whole force of the obstructive features of the normal lung unaided, and are therefore lost. The solid lung, on the other hand, lacks both the special intensifying and deintensifying factors present in the normal lung.

The solid lung, therefore, having chiefly the factor of diffusion, which is present also in the normal lung, to affect the vibrations passing through it, allows the vibrations to reach the chest wall well preserved, and at the same time exerts an equal effect on vibrations of different pitch. Consequently when a normal lung with its capacity for developing these secondary vibrations is replaced by a solid lung, or a solid lung associated with the fluid in the pleural cavity, the vibrations at the chest surface will show more equal changes than in the case of the normal lung, all the vibrations being relatively increased or decreased.

Regarding fremitus, the hand can feel only vibrations of a relatively low pitch, so that whatever interferes with the normal intensity of these vibrations without substituting some factor equally favorable to their transmission—such a favorable effect being sometimes present, in others absent in disease—will result in a diminution of vocal fremitus.

In explaining the comparative intensities of vibrations over normal and solid lung, we must bear in mind, then, that the normal lung relatively favors the transmission of rather low-pitched vibrations by setting up secondary vibrations, while the solid lung tends to favor the transmission of sounds of all degrees of pitch by offering conditions favorable to simple conduction. It is thus easy to see why a diminished vocal fremitus is sometimes associated with an increase in the vocal resonance, and why voices of equal intensity but different pitch may yield different vibration intensities at the chest surface.

The association of whispered pectoriloquy with normal vocal resonance, frequently encountered over small areas of consolidation, is directly due to the size and location of these areas. Thus any modification of the spoken voice vibrations in these areas is lost to the ear because it is obscured by the vibrations coming from the surrounding normal lung, while the whispered vibrations encounter no such external interference.

EPIDEMICS AFTER WARS*

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The return of two million men from Europe after residing there for several months, to scatter throughout the United States, raises some public health questions of profound interest. Do these men represent any new element of danger to their country in respect to epidemic disease? The final answer to this question must be left to the settlement of time; but the importance of the subject demands that some attention be given it now.

The possibility that the returning troops will bring and spread infection lies largely in the fact that the soldiers have been living abroad in a foreign environment, mixing intimately with associates from various countries and places and in many ways not improbably exposed to infectious diseases.

Against some of the most common of these diseases they have been protected by vaccination, and against others by sanitary safeguards equally appropriate. But experience shows that the barriers raised against disease are not always efficacious. And the belief that pestilential diseases of various sorts have existed in Europe, sometimes very near the fighting lines, that the carrier state is often responsible for epidemics of

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these diseases, and that public sentiment is exerting great pressure in order to have the men demobilized with the greatest practicable haste, adds to the interest with which this subject may be regarded.

There is nothing new in the idea that returning soldiers may bring disease with them. Epidemic diseases have repeatedly been spread by soldiers returning after wars. Smallpox, cholera, typhoid and dysentery are included in the list of diseases for which definite statistics are available. In fact, the instances of troops infecting civil populations are so numerous that it may be said that no modern war has been entirely free from consequences of this kind. A careful statistical study of wars in their relation to epidemics, by Prinzing, was brought out in 1918 by the Carnegie Endowment for International Peace, and it is partly from this valuable source of information that some of the data here given have been taken.

SMALLPOX RESULTING FROM THE FRANCO-PRUSSIAN WAR

The way in which epidemic disease may be spread by soldiers finds illustration in the remarkable pandemic of smallpox which spread through Europe as a result of the Franco-Prussian War. In Germany alone, the disease is estimated to have caused the death of 170,000 persons. It was this outbreak that led to the passage of the law in 1874, making vaccination compulsory in Germany.

Smallpox was conveyed to England probably by French refugees in 1870. The death rate there increased from 0.7 per 10,000 inhabitants in 1869 to 1.2 in 1870, and 10.1 in 1871. It then declined to 8.3 in 1872 and 10 in 1873.

From Germany, smallpox spread into Austria and Bohemia. In Vienna the incidence rose per 10,000 inhabitants from 7.6 in 1871 to 52.7 in 1872; in Prague, from 1.5 in 1870 to 39.7 in 1872.

The smallpox was distributed through Germany and, in fact, brought into that country by French prisoners who came from infected districts. Up to the summer of 1870 there had been practically no smallpox in Germany; but at this time, thousands of French prisoners were, within a short time, brought into the country, and scattered in many directions.

The disease is believed to have been disseminated in various ways, including the following:

1. By prisoners who contracted the disease on their way to Germany.
2. By prisoners from infected localities.
3. By persons in the incubation period of the disease.
4. By carriers.
5. By fomites, that is, by infected clothing, blankets and other effects.

It was believed that nurses, guards and workmen who came into contact with the sick and the well spread the disease. There were thus created many small epidemics which spread until they became great ones. There was eventually formed a pandemic which raged more furiously and extensively than any other fatal epidemic in the course of the nineteenth century.

CHOLERA FOLLOWING THE CRIMEAN WAR

The experiences gained in and after the Crimean War illustrate the danger of cholera which infected troops may exhibit to civilian populations. In the Crimean War the French army carried cholera from Toulon and Marseilles to Gallipoli. At first, only sporadic cases appeared. These occurred wherever the French soldiers went in that vicinity, as Nagra, Varna and Adrianople. During the expedition to Dobrudja, cholera broke out in explosive form, compelling the army to return.

The English soldiers during the seige of Varna were also attacked by cholera. In September, when the scene of war was transferred to the Crimea, cholera broke out violently. The total number of deaths in the French army in the campaign was 12,457, in the English army 4,531, and in the Piedmontese army 1,230. The total combined strength of the troops is believed to have been about 262,000.

Cholera spread far and wide from the scene of the Crimean War, extending through Turkey, around the Black Sea, Greece, Smyrna, the Dardanelles, Constantinople and the Danube principalities. Typhus was also prevalent in the French army in 1855-1856. It was epidemic in the Russian army and in southern Russia. According to Murchison, it was carried by English troops to England, where it was epidemic in various parts of the country in 1856-1857.

TYPHOID, DYSENTERY AND SMALLPOX DUE TO THE AMERICAN CIVIL WAR

In the American Civil War, there was a great deal of typhoid, dysentery and smallpox, and there were serious extensions of these infections among the civil population. Owing to the absence of reliable statistics, it is impossible to state to exactly what extent disease was transmitted to the civil population. The vital statistics of some states, however, afford evidence of an unusual prevalence of disease at this time. For example, in Connecticut, the death rate rose from 1.0 in 1863 to 19.0 in 1864, after which it declined to 16.0 in 1865. In Massachusetts it was 18.5 in 1862, 22.1 in 1863, 22.8 in 1864 and 20.6 in 1865. The Massachusetts statistics show marked increases in typhoid, dysentery and smallpox. It is estimated that over 10,000 people contracted one or more of these diseases during the years of 1863-1865.

TYPHOID AND SMALLPOX AFTER THE SPANISH-AMERICAN WAR

An unmistakable wave of typhoid fever spread over the United States soon after the Spanish-American War. It manifested itself especially in small and in large epidemics. It is believed that the American troops returning from the typhoid-ridden camps carried the infection to their homes. There, sooner or later, in ways characteristic of this disease, the scattered foci gave rise to local outbreaks.

Some of the epidemics were of an explosive and highly sensational character. Included among them was the epidemic at Ithaca in 1903. In this instance there were some 1,300 cases; one in ten of the population was attacked, and about one in a hundred died. In the following year, there was an epidemic of 600 cases at Watertown, N. Y. The epidemic at Butler, Pa., at about the same time, had approximately 2,000 cases. Other epidemics at about this time were Augusta, Me., 1903; Cleveland, 1903-1904; Columbus, Ohio, 1904; Lowell, Mass., 1903; New Haven, Conn., 1901.

The deaths from typhoid fever increased in the cities even when no epidemics occurred. The prevalence so established remained high. Among all the cities of the United States having populations of 100,000, or more, the increase in the number of typhoid

cases was as given in the left hand columns of the accompanying table. Still more marked was the increase in cities between 50,000 and 100,000 (right hand columns).

Turning now to the statistics of the commonwealth of Massachusetts, we find that although the death rate from all cases fell from 18.1 in 1897 to 17.5 in 1898, the typhoid rate rose from 2.3 to 2.4, falling decidedly after 1900.

In New York State the typhoid death rate rose from 1.9 in 1897 to 2.6 in 1898. It remained high for several years.

In Michigan the typhoid death rate rose from 1.9 in 1897 to 2.7 in 1898. It remained between 2.4 and 3.8 until after 1909.

PRECAUTIONS AGAINST INFECTION OF CIVIL POPULATIONS

Precautions have been taken on at least two occasions to protect civil populations from infection by troops returning home by water after distant campaigns.

When the French troops were brought back to France, after the Crimean War, only those were allowed to land from the transports who had for some weeks been entirely free from typhus. Several stations for the detention and examination of men were located along the Mediterranean Sea. Here, patients

INCREASE IN TYPHOID IN CITIES OF THE UNITED STATES

Cities of 100,000 or More		Cities Between 50,000 and 100,000	
Year	Cases	Year	Cases
1897	3,571	1897	747
1898	5,228	1898	923
1899	5,146	1899	1,025
1901	5,168	1900	1,002
1902	5,401	1901	867
1903	6,026	1902	968
1904	5,969	1903	940

were left behind, while the well, under suitable precautions, were allowed to proceed. Suspected divisions of troops, before disembarking at Marseilles, were quartered at various islands fitted up as detention stations. Here the men were inspected, bathed and reclothed. The disease was not communicated to the civil populations.

After the Russo-Japanese War of 1894-1895, the Japanese employed a twofold system for the elimination of infectious disease among the returning troops. First, infected soldiers and soldiers suspected of being infected were not allowed to join the transports bound for home. Second, quarantine stations were established at Dairei (near Moyi), in Ninoshoma (near Njina) and at Wadano, Misiki (near Kobe).

When the transports reached their destinations, the men were divided into groups of sixty and sent to disinfection establishments, where they were bathed and their effects disinfected. The sick were sent to the hospital, and suspicious cases were quartered in barracks under observation. If infected men had been found on the ship, the ship's crew and officers were treated as suspects. The disinfection stations received 828,376 men for examination. Of this number, 429,762 were disinfected.

These historical and statistical notes show the great danger that returning troops are to civil communities. Sometimes great epidemics have been produced. What is of even more importance, a continuing prevalence of disease over large areas of country for many years has resulted.

Typhoid fever had reached a low point just before our troops returned from the Spanish-American War. The effect of this return was to produce an increase that has continued in many quarters for twenty years. If statistics were available to show the facts, it would be found that a great deal of the smallpox was scattered through the United States as a result of the Spanish-American War. Statistics from the states where most of the smallpox is believed to have occurred are not available.

PRESENT DANGERS AND PRECAUTIONS

Some of the epidemic diseases now to be apprehended from our European troops are of types which, if once well started, might produce great havoc. They include trench fever, typhus, relapsing fever, cholera and plague. Most of these are transmitted by vermin, most commonly, the louse. It is known that conditions do not generally exist in the United States favorable to the transmission of disease by lice, but in certain congested localities and among foreigners this is not the case. Louse infestation is not an unheard of condition in America in peace times. Methods of dealing with the louse problem so as to prevent their extension among troops are practicable, but the extermination of vermin among great civil populations is another matter.

A certain procedure is now being employed to prevent the introduction of louse-borne diseases by our returning troops. All troops are detained at foreign ports for a period of two weeks, during which time they are deloused. Vermin inspections are then made on transports, for occasionally, in spite of rigid instructions, vermin-infested troops slip through. On arriving in this country all troops are sent to debarkation camps, where universal delousing is practiced. Here good facilities are afforded for the detection of vermin and the delousing of the clothing and the bodies of the soldiers.

It is possible that cholera may be brought to the United States by our troops; but so long as political and social conditions remain as they are today, the disease should not gain a footing. Some regiments are probably exposed to it now. For some time cholera has been known to exist in western Russia, Sweden, Spain and Austria-Hungary, and it has recently been reported in Germany and France. It is also at Archangel, or near there.

Cholera has a special meaning for America, not alone because of its previous visitations and the exposure of our troops to it abroad, but also for the reason that conditions are known to exist in some parts of the country which would favor its spread. It will help to understand this matter to remember that the etiology of cholera and typhoid are practically identical. In some parts of the United States typhoid is a very common disease, and there are few places where it does not occur to some extent.

The meaning of this fact is plain and unpleasant to contemplate. The presence of typhoid proves that people are eating one another's excrement. The amount is infinitesimal, but the consequences are large. If cholera was introduced into this country, this fact, and the circumstance that practically nobody is immune to the disease, would favor its spread. It would not occur explosively, of course. Local and unrecognized epidemics would first occur until the disease obtained a footing. If it was not checked then it would do widespread damage.

By some it may be thought that the administrative control of health conditions is so thorough in America that no disease could spread so seriously as to threaten the whole country. This is probably true; but there is no absolute certainty about it. In recent years some infections have spread surprisingly. It is not to be forgotten that infantile paralysis has run a practically unrestricted course through some of our greatest cities; influenza has spread throughout the country; typhoid, like the poor, is always with us, and pneumonia, far from submitting to the efforts of health workers, has assumed great proportions and is on the increase.

Nobody would think it possible that epidemics could gain headway in a country so enlightened as America, where so much attention is paid to personal and domestic hygiene, and where the public welfare is so much the concern of municipal and state governments. The possibility of pestilence in our homes is incredible. And yet it is exactly this attitude of mind that has probably been held wherever epidemics have broken out since the early history of mankind.

The safe attitude of mind to hold in regard to this subject is one of caution. The proper action is preparation. Only persons well trained in public health work should be put in responsible positions where they are to administer and teach the principles of sanitation and of epidemiology. Boards of health should be soundly constituted as to personnel; they should be given sufficient funds to do their work; politics should be rigidly excluded from the administration of the public health. In no department of public affairs is it more important that ability should be the guiding principle in the selection of officers.

The young men returning from Europe have received a certain amount of instruction in personal hygiene and have had opportunities to observe how unremitting is the care that is necessary in order to preserve the health of troops. They have had many useful, and some painful, lessons in this matter. In some cases they will be able to spread the knowledge which they have received. They are capable of arousing considerable interest in public health work. The possibilities in this direction should be utilized. Efforts should be made looking to the prevention of unnecessary sickness and the promotion of health and efficiency on a higher plane than has ever been seen before.

Annual Report of Health Department.—The total estimated population of Hawaii, June 30, 1918, was 256,180. The total number of deaths was 4,010, an increase of 512 over the previous year. The annual rate per thousand of population was 15.65, and excluding the deaths from external causes, 315, the annual rate would be 14.42 from disease alone. In the city of Honolulu there were 1,395 deaths, an increase of 126 over 1916-1917. The total number of births during the year was 9,404, and according to the figures of the Japanese consulate, 5,086 of these were Japanese. The birth rate for the territory was 36.71, as compared with 34.75 for the previous year. There were 2,039 cases of contagious and infectious diseases reported, an increase of 178 over the previous year. The number of cases of typhoid fever reported by the islands was: Oahu, 1,287; Hawaii, 382; Maui, 152; Kauai, 207; Molokai, 11. All sanitary measures were vigorously carried out during the year, including the rat campaign. Tuberculosis reported numbered 937 cases as against 900 for the previous year. June 30, 1918, the number of lepers in the settlement was 608, an increase of twenty-one from the previous year. An advance in treatment was made, apparently, in the employment of four different fatty acid fractions isolated from chaulmoogra oil.

CARDIAC HYPERTROPHY IN PERNICIOUS ANEMIA

NOTE ON NINETEEN NECROPSIES

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A teamster, American, aged 32, entered the Massachusetts General Hospital, June 14, 1913, with a two years' history and blood typical of pernicious anemia.

In the five years between this date and his death, Sept. 11, 1918, he was seven times in the hospital. Splenectomy was performed in January, 1914; a remission occurred over a year afterward, and five transfusions were performed. He was able to work a considerable part of the time.

HEART HYPERTHOPHY IN PERNICIOUS ANEMIA

Case No.	Number of Necropsy	Diagnosis	Pathologist's Judgment as to the Heart	Heart Wt., Gm.	Remarks
1	2206	Pernicious anemia, puerperal type	Slightly hypertrophied	300	Aged 27; kidneys normal
2	2338	Pernicious anemia	Slightly hypertrophied	310	Slight arteriosclerosis in aortic arch and abdominal aorta; kidneys normal
3	2601	Pernicious anemia	Hypertrophied	436	Slight arteriosclerosis of aorta only; kidneys normal
4	2709	Pernicious anemia	Hypertrophied	358	Slight acute endocarditis of aortic valve; kidneys normal
5	2765	Pernicious anemia	Hypertrophied	450	Arteriosclerosis; kidneys normal; considerable valvular deformity
6	2815	Pernicious anemia	Hypertrophied	285	A very small woman; no other cause for cardiac hypertrophy
7	2925	Pernicious anemia	Hypertrophied	415	Arteries and kidneys normal
8	3010	Pernicious anemia	Slight hypertrophy and dilatation	267	Small emaciated woman; arteries and kidneys normal
9	3060	Pernicious (or aplastic?) anemia	Slight hypertrophy and dilatation	360	Slight subacute glomerulonephritis
10	3084	Pernicious anemia	Hypertrophy and dilatation	363	Arteriosclerosis of abdominal aorta and its branches; slight subacute glomerulonephritis
11	3215	Pernicious anemia	Hypertrophy and dilatation	398	Slight acute glomerulonephritis
12	3374	Pernicious anemia	Hypertrophy and dilatation	472	Slight arteriosclerosis of aorta; arteriosclerosis of coronaries
13	3667	Pernicious anemia	Hypertrophy and dilatation	349	
14	3692	Pernicious anemia	Hypertrophy and dilatation	410	Small band of chronic pericardial adhesions; loose binding; slight acute glomerulonephritis
15	3706	Pernicious anemia	Hypertrophy and dilatation	360	Acute glomerulonephritis (streptococcus sepsis)
16	3806	Pernicious anemia (?)	Dilatation	300	
17	3854	Pernicious anemia	Hypertrophy and dilatation	391	Slight arteriosclerosis
18	3865	Pernicious anemia	Hypertrophy and dilatation	710	
19	3927	Pernicious anemia	No hypertrophy	262	

Scores of blood examinations were made, of which one made in June, 1916, is typical: red cells, 792,000; white cells, 4,000; hemoglobin 20 per cent.

At necropsy there were the usual lesions of pernicious anemia. The marrow showed megaloblastic hyperplasia. The myocardium was fatty, and there was slight edema of the lungs.

The heart weighed 710 gm. The arteries and kidneys were normal and there was nothing in the heart itself or elsewhere to account for hypertrophy.

The results of necropsies in nineteen cases of pernicious anemia at the Massachusetts General Hospital between 1908 and 1919 are given in the accompanying table.

Eighteen out of the nineteen cases that came to necropsy in this ten-year period showed, in the judgment of one of us (O. R.), a definite hypertrophy or dilatation of the heart.

In three of these (Cases 5, 10 and 12), possible causes for the hypertrophy were found in the arteries, the kidneys or valvular lesions of the heart itself. In the other fifteen cases (or 83 per cent.), none of the usual causes (or accompaniments) of cardiac hypertrophy were present.

CONCLUSION

Cardiac hypertrophy, sometimes very considerable, is often associated with pernicious anemia.

DICHLORAMIN-T AND PETROLATUM DRESSING FOR BURNS*

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Dichloramin-T as a wound antiseptic has the very real advantage of furnishing a continuous supply of the antiseptic agent, securing a continuous action over long periods of time, and this with the simplest forms of dressings. A continuous supply of antiseptic is very important in the treatment of infected tissues when it is out of the question to kill all the bacteria at once. The simplest technic is at least an important convenience.

On the other hand, dichloramin-T has some material disadvantages. The solutions must be prepared with some care, and must be fairly fresh, or else tested for the presence of available chlorin. The application causes considerable smarting and burning. This, however, disappears promptly, and can generally be tolerated. On repeated application, it is liable to irritate the skin.

TABLE 1.—TWO PER CENT. DICHLORAMIN-T IN LIQUID SOLVENTS: PERCENTAGE OF THE ADDED DICHLORAMIN-T THAT REMAINS UNDECOMPOSED AT THE TIMES STATED

Solvent	Carbon Tetrachlorid	Chlorcosane	Liquid Petrolatum	Kerosene	Olive Oil
No. of samples tried...	1	2	4	1	1
Period after mixing:					
At once.....	98	100	50 to 100	47	48
1 hour..... ..	..	86			
1 day..... ..	97	81 to 94	50 to 78	13	25
3 days.....	..	85 to 96	.....	10	17
1 week.....	94	65 to 85	32 to 50	8	8
1 month.....	86	60	33	..	7
Later.....	7 weeks:79	2 mo.:34 4 mo.:16 to 19	2 mo.:29	..	4 mo.:4

These disadvantages are rather minor, in most cases. Certain physical limitations are more serious in connection with burns. The large, open surfaces require protection against mechanical irritation and access of air, and this the dichloramin-T-chlorcosane solution fails to furnish. On the contrary, this solution is absorbed by the dressings, which are then glued by the wound secretions, producing pain and injury when the dressings are changed. Paraffined lace-mesh gauze does not avoid this effectively.

These drawbacks were especially conspicuous in the case of the very painful and slowly healing "mustard gas" (dichlorethylsulphid) burns that came under my observation. When these burns reach the ulcerative stage, they become so sensitive that they have to be protected by thick petrolatum dressings, especially at night. These are undesirable, since they furnish protection to the bacteria as well as to the tissues. Superficial infection therefore flourishes, and the healing must be delayed. It was attempted to compromise the matter, either by alternating the antiseptic and protective dressings or by applying a petrolatum dressing to the wound after it had been painted with dichloramin-T-chlorcosane solution (generally of 2 per cent. strength).

TABLE 2.—TWO PER CENT DICHLORAMIN-T IN PETROLATUM AND IN PARAFFIN OINTMENT: PERCENTAGE OF THE ADDED DICHLORAMIN-T THAT REMAINS UNDECOMPOSED AT THE TIMES STATED

Color of Petrolatum	"Superla White"	"Ivory White"	"Onyx"	"Topaz"	"Amber"	"Yellow"	Paraffin Ointment 8:7 (2 Series)
Period after Mixing:							
At once.	15	16; 12	10	12	13	20	61-71
1 day....	10	11; 8	5	6	7	13	68
1 week...	7	8; 4	3	6	6	7	50-61
1 month	..	.....	..	..	..	6	

It was known, of course, that dichloramin-T is gradually destroyed by ordinary petrolatum; but it was hoped that the destruction would be slow enough so that some of the antiseptic would last from one dressing to the next. Subsequent chemical study of the problem showed that this expectation is not realized, and that the application of ordinary petrolatum over dichloramin-T really amounts merely to alternation of antiseptic and protective treatment.

This prompted a more detailed study of the destruction of dichloramin-T by petrolatum and various solvents. This resulted in the working out of a special petrolatum medium which was found to be sufficiently compatible with dichloramin-T for surgical purposes, so that it may be applied either mixed directly with the dichloramin-T or as a protective dressing over the dichloramin-T.

Attention may be called to the fact that liquid and semiliquid mixtures of petrolatum with active drugs are not subject to the same limitations as is the incorporation of these drugs into solid paraffin. Solid paraffin prevents adequate contact of the mass of the antiseptic with the wound. On the other hand, the layers of liquid and semiliquid mediums in contact with the wounds are continuously changed, so that good contact is secured.

RATE OF DESTRUCTION OF DICHLORAMIN-T IN VARIOUS SOLVENTS

The deterioration was estimated by the changes in the "available chlorin," occurring at successive periods in solutions or mixtures containing originally 2 per cent. of dichloramin-T. I am indebted to Miss J. R. Collacott for these determinations.

Estimation of "Available Chlorin."—This was carried out essentially by the method described in New and Nonofficial Remedies, 1918, p. 158. To duplicate 5 c.c. or 5 gm. samples of the mixtures to be tested, there are added 5 c.c. of glacial

* From the pharmacologic laboratotry of the Western Reserve University School of Medicine.
* This investigation was supported by a grant from the Therapeutic Research Committee of the Council on Pharmacy and Chemistry of the American Medical Association.

acetic acid, 10 c.c. of 10 per cent. potassium iodid, and sufficient carbon tetrachlorid or chloroform to thin the material (usually about 5 c.c.); then a few drops of starch test-solution, and finally, from a buret, sufficient tenth-normal sodium thiosulphate solution to discharge the color.

Each cubic centimeter of tenth-normal sodium thiosulphate solution corresponds to 0.0177 gm. of available chlorin.

The results are presented in terms of percentage of the amount of available chlorin that should have been liberated, according to the quantity of dichloramin-T originally added.

Three samples of dichloramin-T (Abbott and Squibb), two samples of chlorcosane (Abbott and Squibb) and two samples of liquid petrolatum (Squibb and Stanolind), and five samples of petrolatum (Stanolind) and one of unknown manufacture were used, with practically identical results for each instance.

Liquid Solvents.—The rate of deterioration is shown by Table 1. Carbon tetrachlorid gives the most stable solutions. Chlorcosane solutions keep practically perfect for three days, and are fairly active for a month. Liquid petrolatum solutions show some loss at once, but would preserve a fair efficiency for a month. Kerosene is surprisingly destructive, even more so than olive oil.

Petrolatum.—Commercial petrolatums are highly destructive for dichloramin-T: so much so that the efficiency is at once practically completely destroyed. This is equally true for a series of six samples representing different depth of colors, so that the coloring impurities are not concerned. This is shown in Table 2.

TABLE 3.—TWO PER CENT. DICHLORAMIN-T IN CHLORCOSANE, OVERLAID WITH 20 GM. OF PETROLATUM, ETC.: PERCENTAGE OF THE ADDED DICHLORAMIN-T THAT REMAINS UNDECOMPOSED AT THE TIMES STATED

	Liquid Petrolatum	White Petrolatum (2 Brands)	Yellow Petrolatum	Paraffin Ointment 3:7
At once	100	46-68	98	100
1 hour	95	13-62	42	99
1 day	101	38		
3 days	...	2-7	14	
1 week	87	3	8	60

The last column contrasts this with a "paraffin ointment 3:7" prepared by mixing 30 parts of melted surgical paraffin wax with 70 parts of liquid petrolatum (the Stanolind brands were used). There is considerable deterioration on mixing, but a practical efficiency is maintained for a week.

The physical properties of the paraffin ointment are fairly satisfactory, although it is rather more solid and damp than the commercial petrolatums.

Chlorcosane Solution Overlaid with Petrolatum, Etc.—In order to imitate somewhat the application of a petrolatum dressing over a dichloramin-T dressing, 5 c.c. of chlorcosane containing 2 per cent. of dichloramin-T were placed in bottles with 20 gm. of petrolatum, etc., without mixing. After definite periods, these mixtures were thinned with carbon tetrachlorid or chloroform, and titrated.

The results, reproduced in Table 3, again show the inferiority of petrolatum, which may destroy most of the dichloramin-T in an hour. Both the paraffin ointment 3:7 and the liquid petrolatum were satisfactory.

CONCLUSIONS

An ointment of 3 parts of surgical paraffin and 7 parts of liquid petrolatum has relatively little destructive action on dichloramin-T and can be used as a protective dressing on wounds (burns) treated with dichloramin-T-chlorcosane solution, and even as a basis for a dichloramin-T ointment.

Ordinary petrolatum, irrespective of its color, is very destructive of dichloramin-T, and cannot be used effectively in connection with it.

Liquid petrolatum can be used in emergencies as a vehicle for dichloramin-T, although it is inferior to chlorcosane.

Solutions of dichloramin-T in carbon tetrachlorid are very stable, while those in kerosene or in olive oil deteriorate very rapidly.

Clinical Notes, Suggestions, and New Instruments

A SIMPLE METHOD OF GIVING INTRAVENOUS INFUSIONS

C. S. BLUEMEL, M.A., M.D., DENVER

In giving intravenous infusions in large numbers to dementia praecox patients and morphin addicts, I found it necessary to simplify the usual technic. This simplified technic gets rid of much of the awkward paraphernalia commonly required, and insures cleanliness in giving the infusions.

PREPARATION OF THE SALINE SOLUTION

Nine gm. of U. S. P. sodium chlorid are weighed out and transferred to a small test tube. The salt is shaken down, and the height to which it comes in the tube is marked with a file or label. The test tube then serves as a 9 gm. measure. A number of new quart medicine bottles are washed clean, and 9 gm. of salt are put in each bottle. The bottles are then filled with freshly distilled water to a previously determined and permanently indicated 1,000 c.c. mark. The resultant solution of sodium chlorid is 0.9 per cent. and is of physiologic strength. If a weaker solution is required, or if the bottles do not hold quite 1,000 c.c., the amount of chlorid is, of course, reduced accordingly.[1]

When the solution has been prepared, the bottle is closed with a two-hole rubber stopper. One hole of the stopper carries a piece of glass tubing of sufficient length to reach to the bottom of the bottle. The other hole carries a piece of tubing that projects an inch or more inside the bottle, and extends 2 or 3 inches on the outside. When later the bottle is inverted, the fluid flows out through the shorter tube, while air flows through the longer one to replace it.

When a sufficient number of solutions have been prepared, they are sterilized by boiling for an hour or more in a water-bath. When the solutions have cooled nearly to body temperature, they are ready for intravenous administration. They can, of course, be kept at the required temperature for any length of time by adjusting the flame beneath the water-bath.

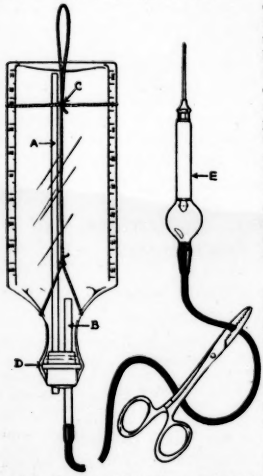
ADMINISTRATION OF THE INTRAVENOUS INFUSION

When an intravenous infusion is to be given, a bottle is taken from the water-bath and placed in a sling or holder made of copper wire or string. The sling consists of a loop round the neck of the bottle and a larger loop round the base. Projecting from the larger loop there is a small loop or hook by means of which the bottle is hung in an inverted position from some convenient object. Before the bottle is inverted, the rubber stopper can be made more secure by fastening it

1. The sodium chlorid should be purchased in bottles, not cardboard drums. Salt put up in cardboard containers is usually contaminated with little flakes of foreign matter. The prepared tablets of sodium chlorid can of course be used instead of the granular salt. The objections to them are that they are not readily soluble, and that only the smaller tablets will enter the mouth of the average quart medicine bottle.

with a strip of adhesive tape that has been split for a short distance in the middle so that it can be passed over the glass tubing. The adhesive is then fastened to the top of the stopper and to the sides of the neck of the bottle.

To the projecting length of glass tubing there is then attached a piece of sterilized rubber tubing about 6 or 8 feet in length. A glass stem, or "observation tube," carrying a No. 17 or No. 18 Lüer needle is then attached to the other end of the rubber tubing (the observation tube and the needle being, of course, also sterilized). The lumen of the observation tube is expanded at one point to a sphere, and this sphere acts as an air trap by arresting bubbles that come down with the fluid. A hemostat is clamped to the rubber tubing a few inches from the observation tube.



Apparatus for giving intravenous infusions. *A*, air inlet tube; *B*, outlet tube for solution; *C*, sling for suspending bottle; *D*, adhesive tape securing rubber stopper; *E*, glass observation tube carrying Lüer needle.

The bottle is hung at any convenient height above the patient within a range of from 2 to 5 feet. The hemostat is released and enough fluid is allowed to flow through the needle to expel the air from the rubber tubing. The hemostat is then clamped again while the patient's arm is being prepared.

A rubber bandage is placed round the patient's upper arm, and the veins are distended by repeated clenching of the fist. A suitable vein is selected, and the site sterilized with alcohol. The needle is then inserted into the vein with a single thrust, and when blood appears in the observation tube, the rubber bandage is removed from the arm and the hemostat is unclamped.

Difficulty in entering the vein is usually due to one or more of three causes: an insufficiently distended vein, a poorly illuminated field of operation, or (most commonly) a blunt needle.

Needles should be sharpened on a smooth stone and examined under a hand lens before they are used. A blunt needle will either push a vein aside or will rip it instead of puncturing it.

When the solution is flowing freely, a "thrill" can be felt by placing a finger on the vein near the point of the needle. The presence of a clear passage into the vein can also be determined at any time by drawing blood from the vein into the observation tube. This is accomplished by pinching off the rubber tubing a few inches from the needle, then momentarily pinching and releasing the short length of tubing that has thus been shut off. As the tubing is released, it aspirates blood into the observation tube. (This pinching process can be readily effected with one hand, the little finger pinching off the tube against the palm of the hand, and the thumb and forefinger performing the aspirating movement.) The flow of the fluid can be further checked by observing the air slowly bubbling into the bottle through the longer length of glass tubing; and also, of course, by observing the gradual descent of the upper level of the fluid. An interruption in the flow of the fluid is usually due to tilting the bevel of the needle against the wall of the vein.

When the bottle has emptied itself, the hemostat is once more clamped on the rubber tubing, the needle is withdrawn, a wad of cotton is pressed at the site of the puncture, and the arm is held elevated for a few minutes.

If desired, several infusions may be given simultaneously. The glass observation tube is raised to the proper angle on a wad of cotton and is held in place with a strip of adhesive tape. One is then free to attend to the next patient.

When the last infusion has been given, the rubber tubing should be placed in a clean glass jar. If the tubing is carefully handled, it will not be necessary to sterilize it with each using, for the inside of the tube cannot readily become contaminated.

When the rubber stopper is removed to refill the bottle, it should not be laid down so that the glass tubing comes in contact with a table top or other contaminated surface. The stopper should be placed in another sterile bottle, which is kept at hand for the purpose. When a number of bottles of solution are being prepared simultaneously, they may be sealed with one-hole rubber stoppers, the hole being lightly plugged with cotton. The double-hole stopper with the glass tubing can then be transferred from bottle to bottle as the infusions are given.

ADVANTAGES

The two great advantages secured by giving intravenous infusions from a medicine bottle in the manner described are cleanliness and simplicity:

Cleanliness.—If the bottles are filled direct from the still, the only possible source of contamination is the salt, and a germ would have to be pretty hardy and weather-beaten to have maintained its existence in contact with salt. The solutions are thus practically sterile before they are sterilized, and after sterilizing they are never exposed to the air or slopped about in gravity tubes or open vessels. Since the outlet tube projects an inch or more into the bottle, it converts the neck of the bottle into a sediment chamber, and thus any foreign particles that may be present gravitate into the neck of the bottle instead of flowing into the outlet tube.

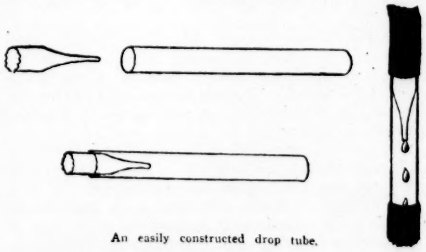
Simplicity.—The solutions are readily prepared, easily carried about, and quickly administered. Using the method described above, one can comfortably give five consecutive infusions in an hour.

900 Metropolitan Building.

A SIMPLE INFUSION DROP TUBE

E. S. POMEROY, M.D., WINTER QUARTERS, UTAH

Finding the usual drop tube for saline infusions very delicate in construction, and the nurse having broken our entire supply of them, we were confronted with the necessity of constructing an apparatus that would indicate the rate of flow for a saline infusion which a serious case demanded immediately.



An easily constructed drop tube.

We found that an ordinary medicine dropper, filed off about an inch above the pointed end, will fit snugly into the end of an ordinary piece of three-eighths inch glass tubing. The rubber tubing is then drawn over them both, leaving the end of the medicine dropper in view within the glass tubing. Greater security is obtained by welding the two together with a flame, but this is not necessary.

TWO CASES OF SKULL FRACTURE WITH SECONDARY MASTOIDITIS AND MENINGITIS, AND IN ONE CASE BRAIN ABSCESS *

J. MORRISSET SMITH, M.D., NEW YORK

I saw these two cases with Dr. William Sharpe at the New York Polyclinic Hospital. Both were cases of skull fracture involving the base, with a secondary mastoiditis and meningitis, and in one case a brain abscess.

REPORT OF CASES

CASE 1.—*History.*—A man, aged 43, white, cab driver, with negative family and past history, fell from the seat of a hansom cab, Oct. 31, 1917, and was picked up unconscious, bleeding from both ears.

Physical Examination.—He was well developed and well nourished, and was plethoric. He was still unconscious and bleeding from both ears. The blood was mixed with cerebrospinal fluid. He was in a state of shock, and spinal puncture revealed blood under marked pressure. The reflexes were exaggerated, especially on the left side. The Babinski reflex was present in the left foot. There were no convulsions and no twitchings. Ophthalmoscopic examination revealed marked edematous changes, with blurring of all fundus details and the nasal half and its margins, denoting marked local pressure changes.

First Operation.—November 2, Dr. Sharpe performed a left subtemporal decompression. The usual incision was made and the temporal muscle incised and retracted. The periosteum was separated, revealing a small bluish black area through the lower portion of the bone. The bone was rongeured, exposing the dura under very marked pressure. The dura was incised; a clot appeared through the opening, and bloody cerebrospinal fluid welled out. The clot was subdural; there was no apparent injury to the cortex, excepting that the vessels were markedly congested. The clot was removed and the wound closed as usual with two drains. The patient left the table in good condition. From the time of admission, except for occasional twitchings about the neck, shoulders and arms, unconsciousness was marked. The patient moved the arms, and turned to either side. Operation was decided on because of the prolonged unconsciousness, blood in the cerebrospinal fluid, and changes in the fundus oculi. The temperature was 102, pulse 94 and respiration 18. The patient regained consciousness at 2:30 p. m. (four hours after the operation).

Second Operation.—Sixteen days later I examined the patient and found a tender postauricular swelling under the right ear, a profuse discharge from the canal, the neck partially rigid, and Kernig's sign present. The patient was stuporous but could be momentarily aroused. The spinal fluid was cloudy. No bacteria were revealed on culture of fluid. The temperature ranged from 99.5 to 101. A diagnosis of mastoiditis and meningitis was made and a mastoid operation performed. Exposure of the mastoid cortex revealed a fracture running below the temporal ridge forward to the spine of Henle. The entire mastoid cavity was necrotic and filled with pus. The fracture extended down into the angle between the cerebral and the cerebellar dura. The mastoid cells were thoroughly exenterated, and the usual closure and dressing made. The patient died two days later of meningitis.

CASE 2.—*History.*—A woman, aged 40, white, with negative family and past history, was injured in an automobile accident, Oct. 31, 1917, and bled from the right ear. She was admitted to the Polyclinic Hospital one week later.

Examination.—The patient was well developed and well nourished. There were ecchymoses of both eyes and the mastoid regions. There was a scalp wound 3 inches long in the occipital region. There were multiple contusions with ecchymoses in the neck, trunk and extremities. The knee jerk was increased. The abdominal reflexes were absent. There was no Babinski reflex. Lumbar puncture revealed the fluid bloody and under high pressure. The pupils were slightly enlarged, the left being the larger of the two. On admission the temperature was 101.6 and the pulse 84.

In the right eye there were mild edematous changes of the upper nasal quadrant; in the left eye, no changes.

A second lumbar puncture disclosed cloudy spinal fluid with symptoms of meningitis.

I saw this patient about three weeks after admission, and my examination revealed almost the identical condition as in Case 1, an unquestionable mastoiditis with marked postauricular tenderness, slight edema, profuse discharge from the canal, haziness of the mental condition, a positive Kernig's sign, the neck stiff, and cloudy spinal fluid, with a report of no bacteria.

Operation was deferred at this time, and the patient was observed for two weeks. The general condition remained about the same. Another lumbar puncture was done, and the patient showed a slight improvement with the mastoiditis more marked.

Operation.—At this point I decided to drain the mastoid. Instead of performing a complete mastoid operation as in the first case I very quickly exposed the cortex, and there was a fracture running forward to the spine of Henle just under the temporal ridge. I then removed the cortex, avoiding the hammer and chisel, and stopped.

The patient immediately began to improve and steadily gained both physically and mentally, until she was finally taken home, about two months later, with the mastoid completely healed.

She showed continuous improvement until Feb. 18, 1918, while in the neurologic clinic to see Dr. Sharpe, when she developed epileptic seizures beginning in the face, right arm and leg, and then general convulsions lasting half a minute. She was admitted to the ward for observation. There were no seizures in three days, and she again went home.

March 8, she was again admitted, showing right facial paralysis with impaired sensation; motor and sensory aphasia; weakness with increased reflexes in the right arm; headache, and tenderness over the left frontoparietal region. The pulse and temperature were normal. The patient was weak and lethargic. Consciousness was not impaired.

Second Operation.—March 18, Dr. Sharpe performed a left subtemporal decompression and drainage. The usual incision was made. The dura was thick and not transparent, the fluid was not under tension, and very little cerebrospinal fluid exuded. The dura was adherent to the cortex, which was grayish and showed signs of previous meningitis. The cortex did not pulsate.

The left frontoparietal region was explored with a hollow needle. A large abscess cavity was found about 4 cm. from the surface of the cortex. A large amount of thick, grayish pus was evacuated which showed pure culture of streptococcus. The usual closure was made with drainage. The patient finally died of meningitis three weeks later.

COMMENT

Was there a true meningitis in these cases, presenting all the clinical symptoms plus a cloudy spinal fluid but no bacteria? Owing to the fact that some patients recover, opinions differ as to the presence of real meningitis.

I think that a bacterial meningitis is present but that the infection becomes localized or walled off, as in these cases, and that this accounts for the absence of free bacteria in the fluid as well as recovery in some of the cases, remembering that in a diffuse meningitis they die without fail.

The two patients showed some improvement following lumbar puncture. While repeated lumbar punctures have been of no avail in cases of diffuse meningitis, it is worth trying as a therapeutic measure when there is evidence of localization.

The prognosis at best in cases of this type is very poor, and the decision as to the best thing to do for the patient is a difficult one. Should I again be confronted by a similar situation I would follow the method used in Case 2, since we establish drainage by simply removing the cortex and do not interfere with the protecting wall which nature may have thrown around the line of fracture.

45 East Sixty-Second Street.

* Reported before the New York Academy of Medicine, March 13, 1919.

SUPERIORITY OF THE METHOD OF ICE-BOX FIXATION IN THE WASSERMANN TEST *

OSCAR BERGHAUSEN, B.A., M.D., CINCINNATI

In 1917, Smith and MacNeal reported results obtained in a comparative study of different antigens and of different temperatures of incubation in the Wassermann test. Last summer the method of ice-box fixation was employed at the Cincinnati General Hospital with such gratifying results that it is now employed as a routine. Previously the classical test in which three different antigens were used, a double unit of complement and amboceptor, in a final volume of 2.5 c.c., with incubation at 37 C. in a water bath, was employed. Comparative studies have convinced us that when small amounts of antigen are used with fixation at the low temperatures of 0 and 2 C., false positive reactions are avoided and reliable results are obtained.

PREPARATION OF ANTIGENS AND THE TECHNIC OF THE TEST

The cholesterinized antigen was prepared by treating 100 gm. of beef heart with 900 c.c. of alcohol in the usual way and adding 0.4 gm. of cholesterin to 100 c.c. of the extract. A dilution of 1:20 in physiologic sodium chlorid solution was used in the test, and its hemolytic, anticomplementary and antigenic properties were determined. The regular alcoholic extract antigen was prepared from a syphilitic heart, and a dilution of 1:10 was used in the test. The Noguchi acetone insoluble fraction was prepared from a beef heart extract, and a dilution of 1:20 was used in the test. The antigenic values were determined in the usual manner, except that over night fixation in the refrigerator was employed. This usually meant a fixation at 0 C., or slightly above this point, for a period of from eighteen to twenty hours. To avoid freezing, the racks were covered with a sterile towel. The next morning the racks were placed at room temperature to warm; then the suspension of sheep corpuscles (5 per cent.) was added, and the racks placed in a water bath at 37 C. for from ten to fifteen minutes. They were then removed and preliminary readings made. When hemolysis was complete in all the tubes of a single test, the reaction was reported as negative. Special studies to determine whether such serums contained sufficient natural amboceptor to dissolve an additional 0.2 c.c. of corpuscles disclosed that such a procedure was not advisable as a routine. When partial hemolysis occurred in all the tubes of a single test, a single unit of amboceptor was found sufficient. When no hemolysis occurred, a double unit of amboceptor was added. When the control tube was completely hemolyzed and the tubes containing the antigen were partially or completely inhibited, a single or double unit of amboceptor was added. Final readings were made after an incubation of from thirty to sixty minutes in the water bath at 37 C. The complement was prepared in the usual way by diluting guinea-pig serum 1:10 with salt water. A double unit of complement was employed. The unit of amboceptor was usually 0.1 c.c. of 1:1,000 immune rabbit serum. We aimed to have a final dilution of 2.5 c.c. when amboceptor was added. Such single tests as needed no additional amount of amboceptor had a final volume of slightly less than 2.5 c.c. Small amounts of antigen were usually employed, from 0.2 to 0.3 c.c., four to five times this amount still giving complete hemolysis with a normal serum and ice-box fixation. We apparently were dealing with a cholesterinized antigen which in these small amounts did not yield the false positive results so frequently described. Only 0.1 c.c. of serum was employed in the control tube, to determine the presence or absence of sufficient amount of natural antisheep amboceptor. When the serum is anticomplementary, this property is detected very easily. At present we are using a similar technic in the examination of spinal fluids, employing 0.5 c.c. for the test.

RESULTS OF THE TESTS

Although we have examined about 2,000 serums with the technic described above, we shall discuss in detail only the results obtained in the examination of 220 serums, since we had better opportunities for comparison.

In Table 1 it is shown that ice-box fixation gives 6 per cent. more positive reactions in known syphilitic cases, as compared to fixation in the water bath at 37 C. for one hour. In the latter method, 0.2 c.c. of serum was used in each tube; in the former, 0.1 c.c. This method was employed to determine whether or not inactivation of the serums tended to produce more negative reactions. Although twice the amount of serum was used in 2.5 c.c. volume in the water bath fixation method, the results were still inferior to those obtained with ice-box fixation.

TABLE 1.—SUMMARIZED RESULTS OF ONE HUNDRED AND FORTY-TWO TESTS ON SYPHILITIC PATIENTS

Fixation	Positive		Negative	
	Number	Per Cent.	Number	Per Cent.
Water bath	91	64	51	36
Ice-box	100	70	42	30

In Table 2 it will be seen that the serum of seventy-eight patients definitely not syphilitic gave negative reactions, the technic being the same as that described under Table 1.

TABLE 2.—SUMMARIZED RESULTS OF SEVENTY-EIGHT TESTS ON PATIENTS NOT SYPHILITIC

Fixation	Positive		Negative	
	Number	Per Cent.	Number	Per Cent.
Water bath	0	0	78	100
Ice-box	0	0	78	100

In Table 3 are given the results obtained by examining both active and inactive serum. The Hecht-Gradwohl modification was employed; in eight serums the hemolytic index was too low. The technic of the Wassermann tests was the same as described under Table 1, inactive serum being used.

TABLE 3.—COMPARATIVE RESULTS OF WASSERMANN AND HECHT TESTS ON ONE HUNDRED AND TEN SERUMS

Method	Positive		Negative	
	Number	Per Cent.	Number	Per Cent.
Wassermann water bath fixation	37	33.6	73	66.4
Wassermann ice-box fixation	49	44.5	61	55.5
Hecht	35	34.3	67	65.7

In Table 4, comparative results with different antigens and ice-box fixation over varying lengths of time are tabulated. Ice-box fixation increases the number of positive reactions when alcoholic extracts are used, that is, such fixation enhances the value of the simple alcoholic extract. Smith and

TABLE 4.—COMPARATIVE RESULTS WITH DIFFERENT ANTIGENS AND ICE-BOX FIXATION OVER VARYING LENGTHS OF TIME

Antigen	4 Hrs. Ice-Box Fixation			Over Night Ice-Box Fixation		
	Positive	Negative	Total	Positive	Negative	Total
Alcoholic	35	62	87	35	52	87
Cholesterinized	21	66	87	33	54	87

MacNeal[1] found a greater number of positive reactions with cholesterinized antigen. Possibly our results are due to the particular antigens used.

CONCLUSIONS

1. Ice-box fixation, from eighteen to twenty hours at 0 and 2 C., increases the number of positive reactions with serum of known syphilitic patients.

2. We have no evidence to show that it tends to cause false positive reactions.

3. In the examination of a large number of serums, ice-box fixation, simple alcoholic extract of a syphilitic organ being used as antigen, yields satisfactory results.

19 West Seventh Street.

1. Smith, J. W., and MacNeal, W. J.: J. Infect. Dis. **21**: 233-248 (Sept.) 1917.

* From the Pathologic Department, Cincinnati General Hospital.

Defective Physique.—The defective physical condition of young men of draft age was largely due to neglect of proper supervision and guidance during their period of youth.—Dr. L. Emmett Holt.

Special Article

TYPHOID IN THE LARGE CITIES OF THE UNITED STATES IN 1918

SEVENTH ANNUAL REPORT

THE JOURNAL presents its seventh annual survey[1] of typhoid fever mortality in cities of the United States having more than 100,000 population. The cities included in the summary number sixty, and are the same as those reported on last year.[2]

TABLE 1.—DEATH RATES FROM TYPHOID IN CITIES OF GROUP 1 (MORE THAN 500,000 POPULATION) *

	Deaths from Typhoid per 100,000 Population				
	1918	1917	1916	Average 1911-1915	Average 1906-1910
Chicago	1.4	1.7	5.2	8.2	15.8
Boston	2.5	2.9	3.5	8.0	16.0
Philadelphia	3.0	6.2	7.8	11.2	41.7
New York	3.7	4.0	3.8	8.0	13.5
Cleveland	4.7	7.1	5.3	10.0	15.7
St. Louis	7.2	7.5	9.4	12.1	14.7
Pittsburgh	9.8	11.2	8.6	15.9	65.0
Detroit	10.0	17.8	15.0	18.1	21.1
Baltimore	12.2	15.5	18.0	23.7	35.1

* The population estimates of the U. S. Census Bureau have been used in calculating the rates in this and the following tables. It should be noted, however, that the length of time since the 1910 census makes all population estimates more or less uncertain. The Census Bureau does not make any estimate of the population of Denver, Portland, Ore., Seattle and Spokane. The population of Washington, D. C., is estimated by an alternative method.

The nine large cities in Group 1, comprising about 15 per cent. of the total population of the country, show again a very notable improvement in their typhoid record. Chicago, Boston, Philadelphia, New York, Cleveland, Detroit and Baltimore, in fact, record the lowest typhoid rates yet reached in their sanitary history. A particularly encouraging item in this group is the marked reduction in Detroit, a city that for several years has had an excessive amount of typhoid for a Northern city.

Baltimore also shows marked improvement. Although this city is handicapped by its negro population and by other circumstances shared by most Southern cities, its improvement as respects typhoid is little short of marvelous. Its rate in 1918 was lower than the average 1906-1910 rate for any member of Group 1, and about one-third its own rate for that period. Undoubtedly the purification of the water supply has had much to do with typhoid diminution; but the steady and energetic efforts of the health department in other ways have undoubtedly had great influence. Baltimore probably suffers disproportionately from imported typhoid, since the neighboring rural districts seem to be rather heavily infected.

The city of New York issues the most complete and satisfactory statements regarding typhoid of any of this group. At the end of each quarter of the year a report is made in the *Weekly Bulletin* regarding the results of blood samples sent to the laboratory, of modes of infection as determined by investigation of individual cases, of immunization, etc. These reports are of great value both for determination of actual channels of infection and as furnishing a basis for frequent comparison. The report, for example, of typhoid for the third quarter of the year shows that thirty-seven cases were traced to contact with active cases of typhoid, and that there was a total of eighty-three contact cases and twenty-three due to milk contamination. One hundred and thirty-five cases were considered to be out-of-town infections. Considering the difficulty of tracing chronic carrier and other contact cases, these figures would seem to indicate that a very large proportion of the typhoid in New York City is due to contact and to milk contamination. An interesting outbreak of typhoid in an institution is described in one of the July numbers of the *Weekly Bulletin*. The New York reports furnish a model for other cities. It is doubtful, indeed, if there is any other large city in the world in which typhoid studies are so systematically conceived and so efficiently carried out. The effect is seen in the remarkable diminution in typhoid in New York City. The department wisely urges the more extensive practice of typhoid immunization as a means for further reducing typhoid prevalence. The following significant paragraph appears in an issue of the *Weekly Bulletin:*

> While it is the practice in most hospitals in this city to immunize student nurses, it is interesting to record that recently the failure of one institution to carry out this procedure resulted in the death of a nurse who had been caring for a typhoid fever patient. This death, like most other typhoid fever deaths, was entirely preventable, and it is to be blamed on those who did not enforce this proved measure of protection, since nurses are necessarily very much exposed.

Too great publicity cannot be given to the responsibility of hospital authorities for imposing typhoid immunization. Are other health departments doing as much as New York?

TABLE 2.—DEATH RATES FROM TYPHOID IN CITIES OF GROUP 2 (FROM 300,000 TO 500,000 POPULATION)

	Deaths from Typhoid per 100,000 Population				
	1918	1917	1916	Average 1911-1915	Average 1906-1910
Seattle	2.3	5.1	3.0	5.7	25.2
Los Angeles	2.8	5.2	3.1	10.7	19.0
Newark, N. J.	3.5	3.5	5.3	6.8	14.6
Cincinnati	4.1	4.1	3.4	7.8	30.1
San Francisco	4.6	4.9	3.4	13.6	27.3
Milwaukee	6.2	5.9	14.9	13.6	27.0
Minneapolis	7.6	5.9	5.8	10.6	32.1
Buffalo	7.8	10.1	10.9	15.4	22.8
Washington	11.9	13.2	12.6	17.2	36.7
New Orleans	20.1	23.0	23.4	20.9	35.6

Most of the cities in Group 2 (from 300,000 to 500,000 population) show improvement over the 1917 rates, the changes in Seattle and Los Angeles being especially noticeable. Every city in the group with one exception seems likely to have a lower record for the present five-year period than for the quinquennium

1. The preceding articles were published May 31, 1913, p. 1702; May 9, 1914, p. 1473; April 17, 1915, p. 1322; April 22, 1916, p. 1305; March 17, 1917, p. 845, and March 16, 1918, p. 777.

2. The number of typhoid deaths has been sent us by the local officer of health, and the rates have been calculated on the basis of population estimates made according to the method of the U. S. Census Bureau (see, however, the note to Table 1). It may perhaps be noted that the figures kindly furnished us by the municipal officials include the deaths of nonresidents as well as residents occurring within the city limits. In some instances this undoubtedly gives an exaggerated impression of the amount of typhoid fever in a community, but at present statisticians are agreed that "the attempt to eliminate the deaths of nonresidents would often result in an understatement of the true mortality" (Bureau of the Census, Mortality Statistics, 1912, p. 13). It is probably true that in 1918 a number of cities suffered disproportionately from the importation of nonresident cases of typhoid. This is particularly the case with some cities that have had a mushroom growth of war industries in their immediate vicinity. It does not seem possible, however, to make any fair adjustment by deducting all nonresident deaths, especially since the general shifting of population has been unusually great and very uneven.

1911-1915. The exception is New Orleans, which remains in a rather mediocre position and has bettered its typhoid rate but little, if any, during the last ten years.

Milwaukee again makes a most excellent showing. This city remains a fine example of the success that may be reached in treating a badly polluted water by the chlorination process. The use of chlorin under the conditions existing in Milwaukee has its difficult administrative side, and it is greatly to the credit of the city authorities that they continue to exercise unceasing vigilance. Complaints of the odor of the water in Milwaukee seem to be rather frequent, but the health commissioner does not allow these to swerve him from his course. The statement is frankly made that while chlorin in the water is disagreeable and even obnoxious, it is necessary and is not poisonous. The occasional occurrence of unpleasant odors is certainly a small price to pay for the relatively high degree of security from water-borne infection that Milwaukee enjoys. It should be noted also that in Milwaukee, as in other cities, by no means all the odors in the water are to be charged up against the chlorination process. The refuse from manufacturing industries must take its share.

TABLE 3.—DEATH RATES FROM TYPHOID IN CITIES OF GROUP 3 (FROM 200,000 TO 300,000 POPULATION)

	Deaths from Typhoid per 100,000 Population				
	1918	1917	1916	Average 1911-1915	Average 1906-1910
Rochester, N. Y.	1.9	3.1	5.1	9.6	12.8
St. Paul	3.5	2.4	4.9	9.2	18.3
Jersey City	4.1	3.2	6.8	7.2	12.6
Providence, R. I.	4.5	5.4	5.1	10.2	14.3
Portland, Ore.	5.6	5.5	4.6	10.8	23.2
Indianapolis	6.6	10.0	26.6	20.5	30.4
Denver	8.7	5.1	7.2	12.0	37.5
Columbus, Ohio	8.9	7.6	13.4	15.8	40.0
Louisville, Ky.	12.4	12.2	9.7	19.7	52.7
Kansas City, Mo.	13.7	10.0	10.6	16.2	35.6

Typhoid in Washington has remained at about the same level for several years. Washington, like Baltimore, probably suffers more than some cities from being surrounded by a zone of communities that contribute infection to the city population. An outbreak in Alexandria, Va., is thought to have helped to swell the list of typhoid cases in Washington during the past year.

Minneapolis has a somewhat higher rate than in 1917 and 1916. Raw milk is thought to have caused some cases in Minneapolis at the beginning of 1918.

Group 3 (from 200,000 to 300,000 population), which last year made an exceptionally good record, now shows an increase in the typhoid rate in seven out of ten cities. Except in Kansas City and Denver, however, the increases are not very great. Four of the cities report rates under 5, as against 3 in the 1917 table.

Indianapolis, which prior to 1917 had a high typhoid rate, now seems well established in the same rank with other Northern cities. The population estimate for Denver is quite uncertain. The Census Bureau makes no estimate for the population of that city, and the same thing is true of Portland, Ore. Louisville comes off especially well this year, considering the war conditions that have prevailed in the neighborhood of that city. The typhoid increase in Kansas City seems to be attributable to an accident to the water chlorination plant in July. Apparently raw river water entered the distributing mains at that time, and the bacterial examinations showed the presence of *B. coli*.

The cities of Group 4 make, on the whole, a better showing than in 1917. New Haven more than maintains its excellent showing of the past two years. Fall

TABLE 4.—DEATH RATES FROM TYPHOID IN CITIES OF GROUP 4 (FROM 125,000 TO 200,000 POPULATION)

	Deaths from Typhoid per 100,000 Population				
	1918	1917	1916	Average 1911-1915	Average 1906-1910
Paterson, N. J.	2.1	11.3	1.4	9.1	19.3
Worcester, Mass.	4.6	4.8	3.7	5.0	11.8
Oakland, Calif.	4.7	1.9	4.0	8.7	21.5
Omaha	5.0	6.4	5.1	14.9	40.7
New Haven, Conn.	5.2	9.2	8.0	18.2	30.8
Scranton, Pa.	5.2	6.0	5.4	9.3	31.5
Fall River, Mass.	7.0	16.9	10.9	13.4	13.5
Spokane, Wash.	9.1	7.1	2.0	17.1	50.3
Syracuse, N. Y.	9.3	6.3	12.2	12.3	15.6
Toledo, Ohio	9.9	9.7	22.9	31.4	37.5
Atlanta, Ga.	14.4	16.8	17.9	31.4	58.4
Memphis, Tenn.	14.9	21.1	36.3	42.5	35.3
Birmingham, Ala.	31.9	54.1	42.6	....	....
Richmond, Va.	65.3	7.0	24.1	15.7	34.0

River cuts its 1917 rate in half. Paterson, which last year suffered from peculiar local conditions, again resumes its place as one of the leaders of this group. Toledo for the second successive year has a typhoid rate under 10. It seems evident that the conditions in Toledo which gave that city unenviable notoriety for some years before 1917 have been largely remedied. The Ohio State Board of Health seems to be keeping close watch on the Toledo water supply.

Atlanta and Memphis again make good records for Southern cities. The campaign against typhoid by the Memphis health department is certainly having its effect. Atlanta seems to have had trouble with its water supply from running its filters at too high a rate, leading at one time to deterioration in the bacterial quality of the filtered water. A chlorinating plant was

TABLE 5.—DEATH RATES FROM TYPHOID IN CITIES OF GROUP 5 (FROM 100,000 TO 125,000 POPULATION)

	Deaths from Typhoid per 100,000 Population				
	1918	1917	1916	Average 1911-1915	Average 1906-1910
Lowell, Mass.	1.8	6.9	11.4	10.2	13.9
Cambridge, Mass.	2.7	4.4	0.9	4.0	9.8
Springfield, Mass.	3.6	6.4	4.7	17.6	....
Camden, N. J.	3.6	3.7	11.3	4.5	....
Bridgeport, Mass.	3.9	6.4	9.0	5.0	10.3
Tacoma, Wash.	5.7	2.5	3.5	10.4	....
Dayton, Ohio	6.9	13.7	14.7	14.8	22.5
Hartford, Conn.	7.0	13.3	6.3	15.9	19.0
Salt Lake City	7.1	18.1	10.2	13.2	....
New Bedford, Mass.	8.0	5.7	4.2	15.0	16.1
Trenton, N. J.	9.4	12.3	6.3	22.3	....
Grand Rapids, Mich.	10.3	12.2	15.6	25.5	29.7
Albany, N. Y.	10.7	10.5	7.7	18.6	17.4
Reading, Pa.	12.3	7.4	18.7	31.9	42.0
Dallas, Texas	12.6	19.4	27.5	....	....
Nashville, Tenn.	32.7	18.3	27.3	40.2	61.2
San Antonio, Texas	54.3	25.7	16.9	29.5	....

installed, however, and such danger as existed from a contaminated water supply does not seem to have been greatly prolonged. It is a question, indeed, how much, if any, typhoid was caused from overburdening the filters. The lower typhoid death rate in Atlanta does not indicate that very much trouble actually occurred from this source. Birmingham still has twice as much typhoid as Atlanta and Memphis.

Richmond has a sad lapse. We are not aware that any report on the high typhoid fever in Richmond in 1918 has been published. A rate of 65, however, should not be allowed to pass without a searching inquiry into causes and remedy.

Group 5 (from 100,000 to 125,000 population) shows a marked relative improvement over 1917. Dayton, which for some years has had a high rate for a Northern city, gives evidence of changing conditions. The improvement in that city is attributed by the local authorities to careful supervision of the private water supplies in and about the city. Many private wells and springs are said to have been condemned on account of their contaminated condition. Dallas, a city that has the advantage of employing an expert director of sanitation, has reduced its typhoid rate materially and ranks as one of the very best of

TABLE 6.—DEATH RATES FROM TYPHOID IN 1918

First Rank (Under 5.0)			
Chicago	1.4	Springfield, Mass.	3.6
Lowell, Mass.	1.8	Camden, N. J.	3.6
Rochester, N. Y.	1.9	New York	3.7
Paterson, N. J.	2.1	Bridgeport, Conn.	3.9
Seattle	2.3	Cincinnati	4.1
Boston	2.5	Jersey City	4.1
Cambridge, Mass.	2.7	Providence, R. I.	4.5
Los Angeles	2.8	San Francisco	4.6
Philadelphia	3.0	Worcester, Mass.	4.6
Newark, N. J.	3.5	Oakland, Calif.	4.7
St. Paul	3.5	Cleveland	4.7
Second Rank (from 5.0 to 10.0)			
Omaha	5.0	St. Louis	7.2
New Haven, Conn.	5.2	Minneapolis	7.6
Scranton, Pa.	5.2	Buffalo	7.8
Portland, Ore.	5.6	New Bedford, Mass.	8.0
Tacoma, Wash.	5.7	Denver	8.7
Milwaukee	6.2	Columbus, Ohio	8.9
Indianapolis	6.6	Spokane, Wash.	9.1
Dayton, Ohio	6.9	Syracuse, N. Y.	9.3
Hartford, Conn.	7.0	Trenton, N. J.	9.4
Fall River, Mass.	7.0	Pittsburgh	9.8
Salt Lake City	7.1	Toledo, Ohio	9.9
Third Rank (from 10.0 to 20.0)			
Detroit	10.0	Louisville, Ky.	12.4
Grand Rapids, Mich.	10.3	Dallas, Texas	12.6
Albany, N. Y.	10.7	Kansas City, Mo.	13.7
Washington, D. C.	11.9	Atlanta, Ga.	14.4
Baltimore	12.2	Memphis, Tenn.	14.9
Reading, Pa.	12.3		
Fourth Rank (Over 20.0)			
New Orleans	20.1	San Antonio, Texas	54.3
Birmingham, Ala.	31.9	Richmond, Va.	65.3
Nashville, Tenn.	32.7		

Southern cities. With the present rate of improvement, Dallas may soon serve as a model for other communities. There is no doubt that, simply as an advertisement, expert health supervision will repay any community. Grand Rapids continues the steady improvement of the past few years, and seems finally to be getting the good results from the operation of its filtration plant that were expected earlier.

Two cities in the group, Nashville and San Antonio, have experienced considerable typhoid increases, although the 1916-1918 average in Nashville is considerably below that of earlier years. There is reason to believe that the actual population in Nashville was considerably higher than the estimated population; and there seems no doubt that the Nashville typhoid rate was unduly swollen by cases brought in from war industry plants in the vicinity. San Antonio reaches the high figure of 54.3, more than double the preceding year. What was the matter? Will the chamber of commerce of that town advertise the typhoid rate in Northern papers, when presenting the claims of San Antonio as a winter resort? Aside from the two cities last named, the group as a whole compares favorably with the groups of cities with larger population.

In 1918, forty cities had a lower typhoid rate than in 1917; twenty, a higher. Forty-four cities had a

TABLE 7.—AVERAGE DEATHS FROM TYPHOID PER HUNDRED THOUSAND IN EACH GROUP, 1916, 1917 AND 1918

Group	Year	No. of Cities	Total Population	No. of Deaths	Av. Deaths per 100,000
1	1916	9	13,743,746	854	6.2
1	1917	9	14,027,263	774	5.5
1	1918	9	13,809,901	598	4.3
2	1916	10	4,053,281	344	8.5
2	1917	10	4,150,099	329	7.9
2	1918	10	4,372,088	298	6.8
3	1916	10	2,635,983	248	9.4
3	1917	10	2,701,929	173	6.4
3	1918	10	2,773,716	193	6.9
4	1916	14	2,250,991	330	14.7
4	1917	14	2,310,372	307	13.3
4	1918	14	2,449,736	331	13.5
5	1916	17	1,983,918	235	11.8
5	1917	17	2,031,313	229	11.3
5	1918	17	2,053,215	240	11.7
Total....	1916	60	24,667,919	2,011	8.1
Total....	1917	60	25,220,076	1,812	7.2
Total....	1918	60	25,458,656	1,660	6.5

typhoid rate under 10, as compared with thirty-seven in 1917, thirty-five in 1916 and thirty-two in 1915. In twenty-two cities the death rate from typhoid fever was under 5.0 during 1918; this was true of only fourteen cities in 1917.

Nine cities reached a rate of 3.0 or less in 1918: Chicago, Lowell, Rochester, Paterson, Seattle, Boston, Cambridge, Los Angeles and Philadelphia.

Again we are encouraged to note the further lowering in the total typhoid rate of the fifty-seven cities whose records are available. Since a large proportion of the males belonging to the age groups especially susceptible to typhoid were in army camps during most of the year, much stress cannot be laid on a slight reduction in typhoid rates. But the facts, so far as they go, indicate a unique condition. It has been the history during previous wars that typhoid has not only

TABLE 8.—TOTAL AVERAGE TYPHOID DEATH RATE (1910-1918)

	Total Population (57 Cities*) Estimated by U. S. Census Bureau Methods	Typhoid Deaths	Typhoid Death Rate per 100,000
1910	20,996,035	4,114	19.59
1911	21,545,014	3,391	15.74
1912	22,093,993	2,775	12.56
1913	22,642,972	2,802	12.77
1914	23,191,951	2,408	10.38
1915	23,740,930	2,068	8.71
1916	24,205,859	1,842	7.61
1917	24,740,068	1,647	6.65
1918	24,971,278	1,557	6.23

* Three cities are omitted from this summary because data for the full period are not available.

prevailed extensively in army camps, but has spread thence to the civilian population. The figures for 1918 indicate at least that no material increase in typhoid has occurred generally in civilian communities. Anti-typhoid vaccination of the military forces of the United States has not merely protected soldiers in camps, but has probably prevented the spread of the disease throughout the civilian population. This is a great achievement.

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TYPHOID IN AMERICAN CITIES

The seventh annual summary of the typhoid death rates in large American cities appears in this issue of THE JOURNAL,[1] and constitutes an encouraging record of sanitary achievement. It might have been anticipated that typhoid would increase in this country during 1918. The absorption of national interest and energy in the war, the absence of thousands of physicians and sanitarians from their accustomed posts, the almost unavoidable interference in many places with normal housing and industrial conditions, the hasty construction of industrial towns in the neighborhood of many cities, and the unprecedented shifting of population, giving the typhoid carriers an opportunity for maximum contact, are all factors that it might have been reasonably supposed would cooperate in producing a general typhoid rate higher than for several years past. It is true that the greatest source of typhoid infection in all previous wars has been removed, namely, the excessive prevalence of typhoid in army camps and its spread from these to the civilian community. Antityphoid inoculation has changed all that. At the same time the other disturbing wartime factors mentioned above are sufficiently important to arouse apprehension as to their effect on typhoid dissemination. But whatever effect they may have had has been more than counterbalanced by the forces tending to bring about a reduction in this disease. Typhoid fever reached a lower ebb in American cities in 1918 than in any other year for which record is available. American health officers deserve great credit for the unremitting work that has made this result possible in the face of great difficulties.

The data gathered by THE JOURNAL for the past seven years are of interest and significance in many other ways. One legitimate inference seems to be that typhoid fever in the United States has become to a great extent a rural rather than an urban disease. There is little doubt from the practically unanimous testimony of health officers as well as from other sources of information that a large part of the typhoid infection occurring in American cities originates in rural districts. Death returns especially show that a relatively large proportion of the typhoid deaths in cities is due to infection contracted in other communities. Both patients sick with typhoid and typhoid-contaminated foodstuffs are imported into the city with far greater frequency than they are exported. In a sense this is perhaps the aftermath of long years of city mismanagement of water supplies which for several decades made cities like Philadelphia, Pittsburgh and Chicago distributing centers for typhoid bacilli, and fastened typhoid firmly on the rural regions for miles about. Now that most American cities have practically eliminated the danger of water-borne typhoid for their own citizens, they continue to suffer from typhoid infection shipped in from rural communities in which the seed was originally implanted through the agency of some contaminated city water supply.

At all events, it is fair to conclude that so far at least as many Northern cities are concerned, further improvement in typhoid rates will have to come very largely through improvement in typhoid conditions in the adjoining suburban and rural districts. Especially is this true of the regions from which such important foodstuffs as milk are drawn. Reduction in typhoid in country places will surely be followed by a reduction in the cities to which they are tributary.

To this end it is desirable that more cities should embark, as New York has done, on detailed typhoid studies. In many places typhoid has shrunk to a point at which it is manageable, and each case can be subjected to a more or less careful study. Such observations not only will be of value in detecting local sources of infection, but also will add to the general understanding of typhoid epidemiology. It is to be hoped that many health officials will find it possible to have made and put on record results of inquiries concerning each case of typhoid developing in the municipality. The relative share of urban and rural sources of infection and of other factors can be determined with exactness only in this way.

1. Page 997.

THE ETIOLOGY OF INFLUENZA

The pandemic of influenza has been the subject of investigation to an unusual extent, not only because of its alarming character and widespread prevalence, but also because it has occurred at a time when great governmental agencies, like the medical departments of armies, were necessarily directed to the study. At the time of the pandemic of 1889-1890, the bacteriologic factors possibly associated with the disease were far from being recognized to the extent that is true at the present time. Pfeiffer's bacillus, the so-called *B. influenzae*, was not described until 1892. Even cursory acquaintance with the literature of influenza

since that date cannot fail to indicate the uncertainty that has existed regarding the possible etiologic significance of this micro-organism. The most recent studies undertaken in connection with the outbreaks of influenza during the past year continue to give indications of this uncertainty.[1] Far from regarding the Pfeiffer bacillus as the primary infective agent, many, if not most investigators still insist that influenza is a disease, to quote Kinsella, caused by some as yet undiscovered agent, which produces inflammation of the entire respiratory tract, and effects a very profound lowering of resistance, which is perhaps expressed by the constant and striking leukopenia. Lack of reaction is the most noticeable clinical feature. Under these circumstances, invasion follows by the various bacteria that are capable of becoming pathogenic, although harmless in the normal mouth.

It is still too early to marshal the mooted facts into a decisive order. Meanwhile, it can only be helpful to compare the findings regarding influenza which are being arrayed from many quarters as the result of the outbreak of 1918. By contrasting the observations made in diverse places and many lands it should become possible to distinguish the accidental from the omnipresent factors and, at length, formulate more definite theses which may direct further experimental investigations. Accordingly, it is interesting to learn the recently published conclusions of the Kitasato Institute for Infectious Diseases in Tokyo regarding the cause of the influenza that prevailed in Japan last year.[2] The clinical findings seem to agree with those that were obtained in the last pandemic; and according to the Japanese investigators the epidemiologic and clinical data tend to identify the influenza that has prevailed in Japan with the disease recently current in Europe and America.

The bacteriologists of the Kitasato Institute claim to have found *B. influenzae* in almost pure culture in the nasal cavities of patients, while healthy persons do not harbor it in the same degree. Serologic and other laboratory studies lead the Japanese investigators to the conclusion that "this pandemic of the influenza is caused by Pfeiffer's bacillus." They argue that the nature of this organism is such that it affords only a weak immunity to the host; nevertheless, they add, this fact need not disprove its pathogenicity.

The validity of such contributions must remain in abeyance until such rather positive views have been considered in comparison with data gathered from diverse other sources. In a review of their experience with influenza in the Medical Clinic of the Johns Hopkins University, Bloomfield and Harrop[3] also come to the conclusion that epidemic influenza in 1918 is clinically identical with the disease seen in previous pandemics. It is not primarily a local disease of the respiratory tract. They argue that it presents a definite and characteristic clinical picture quite apart from the pulmonary complications; the main features of uncomplicated cases being a constant set of symptoms, characteristic erythema and appearance of the mouth, fever of definite duration, and leukopenia. Bloomfield and Harrop frankly assert, however, that proof is lacking that the Pfeiffer bacillus is the primary cause of uncomplicated influenza. The same conclusion has been reached by Howard[4] of the Johns Hopkins Clinic, who believes with practically all American investigators that *B. influenzae* is merely a secondary invader, though in some cases it may be a frequent cause of terminal bronchopneumonia.

Pritchett and Stillman[5] have found *B. influenzae* present in the mouths of 43 per cent. of normal individuals examined in the personnel of a large hospital. On the other hand, they cultivated the organism from the mouth of 93 per cent. of cases of influenza and bronchopneumonia. This high incidence of the Pfeiffer bacillus in the upper respiratory tract during the epidemic, according to Pritchett and Stillman, is a point in favor of the view that the micro-organism may be of significance in the disease in question. The upshot of all these somewhat comparable findings but conflicting views is that we must defer positive conclusions until more decisive evidence is brought forward.

LIMITING THE USEFULNESS OF THE PUBLIC HEALTH SERVICE

The substantial support given by Congress to the United States Public Health Service during the war encouraged all interested in public health to hope that at last this important branch of the federal government was to be supported in its efforts to meet the urgent demands for a national health service. This hope was all the more justified by the effective work accomplished by the Public Health Service in aiding the nation's war activities. Here, certainly, were numerous convincing demonstrations of what could actually be accomplished by well-planned public health activities carried on through the effective cooperation of federal, state and local health agencies.

In the face of these demonstrations, and despite the fact that the need for health conservation is greater than ever before, it is regrettable to note that Congress, in its plan to place all government departments on a

1. See, for example, Dever, F. J.; Boles, R. S., and Case, E. A.: Influenza at the U. S. Naval Hospital, League Island, Pa., J. A. M. A. **72**: 265 (Jan. 25) 1919. Stone, W. J., and Swift, G. W.: Influenza and Influenzal Pneumonia at Fort Riley, Kansas, from Sept. 15, to Nov. 1, 1918, ibid. **72**: 487 (Feb. 15) 1919. Kinsella, R. A.: The Bacteriology of Epidemic Influenza and Pneumonia, ibid. **72**: 717 (March 8) 1919.

2. Okawara, I.; Tanaka, T.; Watanabe, Y.; Koyama, R., and Sato, T.: On the Cause of Influenza that Prevailed in 1918, Kitasato Arch. f. exper. Med. **2**: 335, 1918.

3. Bloomfield, A., and Harrop, G. A., Jr.: Clinical Observations on Epidemic Influenza, Bull. Johns Hopkins Hosp. **30**: 1, 1919.

4. Howard, S. E.: Bacteriological Findings in Epidemic Influenza, Bull. Johns Hopkins Hosp. **30**: 13, 1919.

5. Pritchett, Ida W., and Stillman, E. G.: The Occurrence of Bacillus Influenzae in Throats and Saliva, J. Exper. M. **29**: 259, 1919.

prewar basis, has deemed it expedient to discontinue or curtail a number of important activities recently developed by the Public Health Service. With the failure of Congress to pass the sundry civil bill, it is true that no final decision on the appropriation for the Public Health Service has yet been reached. It may be profitable, therefore, to examine some items of the program and budget prepared by the Public Health Service and compare this with the recommendations made by the Committee on Appropriations of the House of Representatives.

The reductions proposed by the committee relate chiefly to the items on field investigations of public health, interstate quarantine service, studies of rural sanitation and venereal diseases, and embrace both research and administrative work. For instance, the request for field investigations of public health—which embraces much of the research work of the service—was cut from $1,050,000 to $300,000. Under the appropriation requested, the bureau proposed to meet at least some of its responsibilities in the field of child hygiene ($150,000) by studying important problems relating to infant mortality, malnutrition and school hygiene, and by making demonstrations in this field in cooperation with state and local health authorities. The sum of $100,000 was asked for to improve the system of collecting morbidity reports by stationing a statistical clerk in each state and providing a central office for the tabulation and publication of this material. Half a million dollars was assigned to the very important field of industrial hygiene, a third of the sum for research on such matters as industrial air conditions, the employment of women in industry, industrial poisons in the dye industry, industrial fatigue and illumination, the rest for field investigations in cooperation with the Department of Labor, and state departments of health and of labor. Finally, the sum of $300,000 was to be utilized to study infectious diseases in man. When one considers the enormous havoc still wrought by diseases ordinarily considered preventable, as tuberculosis, pneumonia and malaria, this sum certainly constitutes a reasonable request. Yet in spite of the urgency of these investigations, the committee cut the estimate 70 per cent.

The requests made by the Public Health Service under the other heads suffered a similar reduction. For interstate quarantine, in place of $850,000 requested only $25,000 was recommended; for rural sanitation, in place of $500,000, only $50,000, and for venereal diseases, in place of $1,085,000, only $200,000 was recommended.

Among the items of the estimate that suffered severely was that for the control of biologic products, the appropriation for which was reduced from $100,000 to $35,000. The result of this will be that research in the field of serums and vaccines and similar products will be curtailed in a most serious manner. This particular subject is second to none in importance to the medical profession, and it will be most unfortunate if the activities of the services in this respect must be reduced.

It is not believed that the radical reductions recommended by the Committee on Appropriations reflect any antagonism on the part of Congress toward the Public Health Service. They seem rather to represent only the general policy of retrenchment which needs must be adopted in order to return the country to normal peace conditions. It is most unfortunate, however, that the attempt is apparently being made to effect horizontal reductions rather than to consider each activity in relation to the postwar needs of the country. From the latter standpoint the activities of the Public Health Service surely demand expansion and development rather than curtailment.

As a new sundry civil bill will soon be considered by the new Congress, the time is most opportune for physicians to express their interest in public health by urging favorable action by Congress on the appropriation requested for the Public Health Service. That this will be utilized to good advantage may be seen by studying the excellent program prepared by the Public Health Service, printed on page 1023 of this issue.

DEFECTIVE NUTRITION OF CHILDREN IN WAR-STRICKEN EUROPE

We have taken occasion at various times to point out some of the important practical consequences of the more recently acquired information regarding the food requirements of the human body in childhood. Contrary to the older assumptions, whereby the needs of the growing child for food fuel were expressed in proportionate fractions of the energy requirement of the adult, the modern nutrition studies, in this country in particular, have demonstrated the unexpectedly higher basal metabolism of childhood. If it is true, as Lusk [1] has maintained, that many cases of reported chronic malnutrition of infants are in reality due to persistent undernutrition, carried out in ignorance of the proper amount of food required by the child, a comparable ignorance applies to the dietary of later childhood years. It cannot be reiterated too often, until the knowledge has been firmly established where it is most needed, that the basal requirement of boys is, as Du Bois has shown, 25 per cent. greater than that of the adult. A growing, vigorous youth may consequently not be satisfied with a daily intake of 3,000 calories, which might be ample for the nutrition of his parent.

Throughout the period of stress in respect to available food during the war, even at a time when patriotism and self-preservation called for the utmost conservation of our food resources, the United States Food Administration has never overlooked these

1. Lusk, Graham: The Fundamental Basis of Nutrition, 1914, p. 15.

higher food requirements of the American youth. The avoidance of waste has never been translated into a stinting of the proportionately higher dietary allowance especially called for in childhood. The American food conservation propaganda has been wisely guided by experts in the science of nutrition rather than by mere political appointees. Consequently comparatively little physiologic detriment seems to have been experienced.

How other countries have fared remains to be learned when the statistics and other forms of evidence become available through the renewed scientific intercourse after war conditions. An exceptionally interesting indication of what failure to realize the fundamentals of nutrition may entail during the years of childhood has been brought to light in a recently published account from one of the large orphanages of Berlin. Fuhge[2] has made accurate measurements of the food intake and metabolic balance of a group of children ranging from 6 to 14 years of age during the third year of the war, when food conditions were evidently becoming serious. The total calory intake as well as the proportion of protein ingested were evidently small, so that vigorous exercise sometimes entailed a notable loss of body tissue. The deficit in the diet was attributable in considerable degree to the diminution of fat allowed.

The detailed statistics of such investigations are of interest to the specialist alone. Of more widespread significance is the evidently retarded growth of the children thus examined. The failure to provide adequately for the nutrition of childhood in the Central Empires is similarly indicated in reports published from Prague during the past year.[3] The appearance of infantile scorbutus seems to have been one of the varied consequences falling in the wake of inappropriate nutrition. Unless marked improvement in the dietary possibilities, and particularly a more intelligent appreciation (even in the historic home of the science of nutrition) of the requirements of childhood are soon attained, the consequences to large numbers of developing individuals may be most unfortunate. As Mrs. Rose [4] has admirably expressed the situation: one year of good feeding at the beginning of life is more important than ten years after 40, and a baby's needs are not to be judged by an adult's inclinations. Feeding must be a matter of principle and not of impulse, and the reward will be partly in the present —much more in the future. We should profit by the lessons of European misfortune. Perhaps we can help by precepts as well as by contributions to avert further disaster among the sorely stricken inhabitants of the invaded and other afflicted lands.

2. Fuhge, G.: Eine Stoffwechsel-Untersuchung an Kindern im Alter von 6-14 Jahren im dritten Kriegsjahre, Jahrbuch f. Kinderh. **88**: 43, 1918.

3. Epstein, A.: Ueber eine auffällige Häufung der Barlow'schen Krankheit in den Kriegsjahren 1917-1918, Jahrb. f. Kinderh. **88**: 237, 1918.

4. Rose, Mary Swartz: Feeding the Family, New York, 1916, p. 118.

Current Comment

IS A CHILD'S LIFE WORTH SIX DOLLARS?

How much does it cost to prevent deaths from diphtheria? The Ohio *Public Health Journal* for February gives the experience of the City of Salem, Ohio, for twenty years. During the ten years from 1890 to 1899 this town of about 10,000 inhabitants had 162 cases of diphtheria, with forty-eight deaths, or 30 per cent. In 1900 the city health authorities began furnishing free antitoxin for all cases of diphtheria. In the ten years from 1900 to 1909 there were 126 cases, with only one death — a case in which antitoxin was not administered until the third day. Had the percentage of fatalities been as high during the second decade as during the first, Salem would have had thirty-seven deaths from diphtheria in that time. The free antitoxin furnished for the ten years cost the city approximately $220, or an average of $6 per life. Any community desiring to know how much it would cost to save a child's life from diphtheria can ascertain this by multiplying the annual number of diphtheria cases by the cost of 5,000 units of antitoxin, and dividing the result by the number of deaths from diphtheria each year.

FALLACIES IN THE DISCUSSION OF SOCIAL INSURANCE

In the present discussion of social insurance in this country, as in England ten years ago, it seems impossible for either its advocates or its opponents to avoid extreme and partizan statements. Arguments on both sides are characterized by sweeping generalizations and unwarranted deductions, which too often are accepted by the reader because they are made by some well known authority. An illustration of this tendency is to be found in an editorial in the *New Republic*, March 22. After stating that "neither Republican nor Democratic leaders can afford to compromise" on the health insurance bill now before the New York legislature, the editorial continues: "Organized labor has unanimously placed health insurance first among its immediate legislative demands." This statement is incorrect. If the editor had said, "Organized labor *in New York State* has unanimously placed health insurance first among its immediate legislative demands," his statement would have been correct. The New York Federation of Labor has indorsed health insurance, as have a few other state federations. Enumerating the forces behind the measure, the *New Republic* says: "An impressive array of civic societies, far-sighted employers and physicians have come to the support of the bill." No "impressive array" of physicians has as yet supported any health insurance measure in any state. The editorial continues: "Congress adjourned without taking any action. The states must step into the breach — above all the pivotal state of New York." No measure providing for national health insurance has ever been presented to Congress, nor could Congress take any

action on this subject. It is essentially a matter that comes under state jurisdiction. New York may be a "pivotal state" in the political field, but it is no more pivotal from an industrial or economic standpoint than is Massachusetts, Pennsylvania, Ohio or Illinois. The editorial concludes: "The health insurance bill is the most important measure now before the legislators and the people of New York State. It should be passed without compromise, evasion or delay." It should if it is the best bill that can be devised; otherwise, it should not. If in the New York bill the interests of employees, employers, physicians and the state were properly safeguarded, then the statement of the *New Republic* might be accepted. But in the present state of knowledge on this question, any bill is an experiment. Probably before its passage, certainly before its administration is possible, a considerable amount of compromise will be necessary. Delay at present is not only unavoidable but desirable. No state has as yet passed any health insurance measure. The progress of the first state that does will be carefully watched. If delay affords an opportunity for careful consideration of the many phases of the bill, exhaustive discussion of the details, and a patient hearing to all interested parties, then the delay will be well worth while. Probably in no field of legislative action today is so great caution and deliberation advisable as in the field of social insurance. The editorial in the *New Republic* is a fair sample of the hasty and often misleading generalizations that are appearing on this subject. It is more than ever necessary that physicians keep cool heads and clear judgment, and refuse to allow their attention to be diverted from the essential principles involved in these proposed measures.

THE VICTORY MEETING

From the reports received from the Local Committee on Arrangements, the attendance at the annual session of the American Medical Association in Atlantic City next June—the Victory Meeting—will be unusually large. It therefore behooves those who will attend the meeting to make hotel reservations early. This suggestion should not be understood to mean that hotel accommodations will not be available, but that hotel accommodations in the hotels on the beach front — the Boardwalk — may be difficult to secure. Attention is called to this matter solely for the purpose of urging those who particularly desire to be on the beach front to make their reservations early. Off the Boardwalk — up in the town — there are a number of excellent hotels. Two weeks ago, a list[1] of the hotel headquarters of the various sections was published in The Journal. An extended list of the Atlantic City hotels announcing rates and capacity is being prepared for the "Victory Meeting Number" of The Journal. In making reservations, the hotels should be addressed directly, or in case difficulties are encountered in obtaining satisfactory accommodations, the assistance of the chairman of the Local Hotel Committee, Dr. David B. Allman, or of the chairman of the Local Committee on Arrangements, Dr. Emery Marvel, may be requested by addressing them at Atlantic City.

1. The Journal, March 22, 1919, p. 869.

LEARNING SPANISH

In another department is an answer to an inquiry relative to methods for learning Spanish. It is gratifying to note that the Spanish edition of The Journal has been instrumental in awakening greater interest in the Spanish language. Both for business and cultural reasons the Spanish tongue and literature should be better known in the United States. Those who take the pains to learn Spanish will find themselves amply repaid by the wealth of a literature which only now is beginning to be appreciated fully in this country. Unfortunately, many English translations of Spanish works which are available are not of the best. If the new era of friendship among nations is to develop—especially among the nations of the western hemisphere—the different peoples must become better acquainted. One way to accomplish this is by learning the foreign languages. We seem to be today no nearer than in the days of the Tower of Babel to that time when a universal language shall rise from the ruins of Latin, Volapük, Esperanto and Ido. It may not be amiss to say that those interested in Spanish will find an unusually easy method of improving their knowledge by comparing the translations in the Spanish edition of The Journal with the English original. In this way they may enrich their vocabulary and learn some of the finer distinctions in the grammatical construction of the two languages. One of the greatest of the Spanish monarchs is credited with saying that a man is worth as many men as languages he knows.

AN EXPLANATION OF DIGESTIVE LEUKOCYTOSIS

Digestive leukocytosis is an expression that has been employed for many years to indicate the fact that white blood corpuscles are found in the blood in unusually large numbers during the period of absorption of digestion products, particularly after a meal rich in proteins. This phenomenon has been appealed to in support of a now discarded hypothesis that the leukocytes play an important part in the transport of digestion products from the intestine to remote parts of the organism. The suggestion was made that the leukocytes are mobilized in large numbers in the intestinal wall during absorption to assist in the removal of the alimentary contributions into the circulation. Without presenting the arguments that led to the abandonment of the assumptions thus made, we may point out that the observed facts—the existence of a postprandial leukocytosis—remain valid. The maximum count occurs a few hours after the meal. According to investigations of Goodall, Gulland and Paton,[1] the blood change is chiefly due to a very constant increase in the number of lymphocytes, contributed to much less regularly by a relative increase in the polymorphonuclear cells. They further demon-

1. Goodall, Gulland and Paton: J. Physiol. **30**: 1, 1904. Gulland and Paton: Ibid. **33**: 20, 1905.

strated that the source of the leukocytosis is entirely, or almost entirely, the bone marrow, in which they found an increased rate of production of white corpuscles during digestion. These long known facts in relation to "digestive leukocytosis" now seem capable of further elucidation. At the physiologic laboratory of McGill University, Montreal, Downs and Eddy[2] have shown that subcutaneous injection of secretin, the hormone that excites the flow of pancreatic juice, brings about a considerable increase in the number of red and white corpuscles in the blood stream by directly stimulating the production of new cells. If, as is now generally believed, secretin enters the circulation and is carried in the blood during digestion, there is no apparent reason why it should not thus normally be at least as potent a stimulus to blood cell formation as when experimentally introduced into the circulation. The similarity between the differential leukocyte counts during digestion and after the administration of secretin is, according to Downs and Eddy, additional evidence of secretin's being the cause of the increase in the number of corpuscles during digestion.

Medical Mobilization and the War

Personnel of the Medical Corps

For the week ending March 28, the Medical Corps contained 19,655 officers, a decrease from the previous week of 588. The Medical Reserve Corps contained 1,319 officers. The total number of medical officers discharged since the beginning of the war is 13,705.

Casualties Among Medical Officers of the A. E. F. in France

From July 1, 1917, to March 13, 1919, there were 442 casualties among medical officers of the American Expeditionary Forces in France, divided as follows: died of wounds, 22; died of accident, 9; died of diseases, 101; killed in action, 46; lost at sea, 4; missing in action, 7; prisoners not wounded, 28; suicide, 3; wounded in action, degree undetermined, 47; wounded in action, severely, 93; wounded in action, slightly, 72.

Awards of Military Cross

Under authority delegated by King George the Fifth the field marshal commanding in chief has awarded the military cross for gallantry and devotion to duty in action to Sydney S. Schochet, Lieut., M. C., U. S. Army, Chicago, attached to the Highland Light Infantry.——Dr. Vincent M. Diodati, Philadelphia, who enlisted, in the army the day the United States declared war and sailed with the first detachment of American medical officers sent over to be attached to the British forces, has been notified he will receive the coveted military cross from the hands of King George of England.

New Base Hospital Publications

Many of the base hospitals are now issuing special publications. The first number of the *Mess-Kit*, "written and published by the enlisted men of the U. S. Army Base Hospital, Camp Merritt, N. J., for the amusement and profit of patients from overseas, soldiers, sailors, marines and for all men and women in the service or out of it who have helped to 'make the world safe for democracy,'" has just been received. It is a monthly publication, well illustrated, instructive and interesting.——*Asyouwere* is the title of a publication issued weekly by U. S. Army General Hospital No. 24 at Pittsbugh, Lieut.-Col. E. D. Kramers, commanding officer. It contains much stimulating material, personal items, original cartoons, etc.

Medical Manuscripts Based on Military Facts to Be Submitted to Surgeon-General Before Publication

The Surgeon-General announces that the order requiring medical officers to submit to the Surgeon-General's Office for approval medical manuscripts based on military or official records or on military experience during the war is still in force as far as medical officers on active duty are concerned. Officers retired from active duty are requested to do likewise as a courtesy to the Surgeon-General and in aid of assembling material for the medical history of the war. Manuscripts are to be accompanied by a carbon copy. If approved, the original copy will be forwarded to the journal designated for publication, and the carbon will be filed in the records of the Medical History of the War.

Neosalvarsan Smuggled

According to *Oil Paint and Drug Reporter*, 1,900 ampules of neosalvarsan, said to have been smuggled into this country from Germany by an officer of the Medical Division of the United States Army, were seized by customs officials at Kansas City last week. The Army officer, whose name is withheld by the officials, is said to be in the East, and his arrest is expected momentarily. The value of the goods seized is estimated by the customs officials at $18,000. This is believed to be only a part of a larger amount smuggled into the United States. The duty, under normal conditions, would be about $6,000 on the quantity seized.

Federal officials say that the officer who brought the drug into this country is not only guilty of smuggling, but has violated the provision which prohibits the importation of goods obtained through "trading with the enemy," and has also violated the Pure Food and Drugs act when he failed to submit it for inspection under the provision of that act on his arrival here.

Regulations Governing Conversion of War Risk Insurance

The regulations governing the conversion to standard forms of life insurance policies of all war-time term insurance taken out by soldiers and sailors since the entrance of the United States into the war have been approved by Secretary Glass. After conversion this insurance will be known as government life insurance.

The forms of policies which may be had in exchange for the war-time term insurance are: ordinary life, twenty-payment life, thirty-payment life, twenty-year endowment, thirty-year endowment and endowment payable at the age of 62. The premium rates for these converted policies are lower than those charged by private insurance companies. The policies contain exceedingly liberal privileges, providing for cash and loan values, paid-up and extended insurance, and further providing that the insured will be paid for life a monthly income in the event that he becomes totally and permanently disabled. All of these policies are incontestable from date of issue and are free from restrictions as to residence, travel or occupation. The holders of the policies will be eligible to share in and receive dividends from gains and savings and the proceeds of the policies are excempt from all taxation. Premiums on the new forms of government insurance are payable monthly and may be paid at any time during the month. They may also be paid annually, semiannually or quarterly.

Awards of Distinguished-Service Cross

By direction of the President, under the provisions of the act of Congress approved July 9, 1918, the Distinguished-Service Cross was awarded by the commanding general, American Expeditionary Forces, for the extraordinary heroism in action in Europe, to the following-named officers and enlisted men of the American Expeditionary Forces:

LOUIS DIENER, Capt. Medical Corps, Sanitary Detachment, 112th Machine Gun Battalion, Baltimore. For extraordinary heroism in action in the Ravine de la Veux Michieux, France, Oct. 26-27, 1918. On being notified that an enemy shell had struck a dugout occupied by the brigade radio detachment, he ran to the aid of the buried men and worked tirelessly to rescue them. Despite the fact that numerous gas and high explosive shells were falling in the vicinity, he continued his efforts until he was certain that the three men remaining in the ruined dugout were dead.

2. Downs, A. W., and Eddy, N. B.: Secretin, IV, The Number of Red and White Corpuscles in the Circulating Blood During Digestion, Am. J. Physiol. **47**: 399, 1918; **46**: 209, 1918.

GEORGE E. McGINNIS, Capt. Ambulance Company 110, 103d Sanitary Train, Philadelphia. For extraordinary heroism in action at Fismette, France, Aug. 9-10, 1918. During the night of August 9, Captain McGinnis, with complete disregard of his personal safety, made a reconnaissance under fire and located a line of evacuation for ambulances from Fismette, and on the morning of August 10, under shell fire, he personally repaired the bridge between Fismes and Fismette, thereby making possible the evacuation of twenty-eight wounded men.

WILLIAM H. J. O'BRIEN, Lieut., M. C., U. S. Army, New York, on duty with the 76th U. S. Field Artillery, A. E. F. For extraordinary heroism in action near La Trinité Ferme, France, July 14-15, 1918. During the entire night of July 14-15 and throughout the following day, Lieutenant O'Brien was continually exposed to high explosive and gas shells in caring for the wounded, even after he had been painfully wounded by a fragment of a shell.

HENRY E. BUNCH, Capt., M. C., U. S. Army, 168th Infantry, Kennecott, Alaska. For extraordinary heroism in action near the Bois de Chatillon, France, Oct. 13-16, 1918. During the advance of his regiment in the Verdun sector he established aid stations at points as far advanced as possible and supervised them throughout the combat, working continuously, tirelessly, and fearlessly without food or rest. October 14, this officer went out in advance of the front line to reconnoiter a site for an aid station, and ambulance route. Seeing a wounded officer lying about 300 meters from the enemy's line, he went to his rescue and carried him through terrific machine gun and rifle fire to a shell hole, where he administered aid, in entire disregard of his own safety.

URBANE F. BASS, Lieut., M. C., U. S. Army, 372d Infantry, Fredericksburg, Va. For extraordinary heroism in action near Monthois, France, Oct. 1-6, 1918. During the attack on Monthois he administered first aid in the open under prolonged and intense shell fire until he was severely wounded and carried from the field.

WILLIAM H. J. O'BRIEN, Lieut. M. C., U. S. Army, 76th Field Artillery, New York City. For extraordinary heroism in action near La Trinité Ferme, France, July 14-15, 1918. During the entire night of July 14-15, and throughout the following day, Lieut. O'Brien was continually exposed to high explosives and gas shells in caring for the wounded, even after he had been painfully wounded by the fragment of a shell.

RALPH E. SWARTS, Lieut., M. C., U. S. Army, 23d Infantry. For extraordinary heroism in action near St. Etienne à Arnes, France, Oct. 3-9, 1918. During the offensive operations of Oct. 3-9 Lieutenant Swarts worked unceasingly in the most advanced stations in the divisional sector dressing the wounded in the open under terrific machine gun and shell fire. He took cover only when all wounded had been dressed and evacuated.

Weekly Bulletin, A. E. F.

(March 3, 1919)

[NOTE.—We quote the following verbatim as it is evidently descriptive of cases of epidemic lethargic encephalitis occurring among the troops. It is evidence of the difficulty of men working in the field without access to current medical literature to keep abreast of medical knowledge.—ED.]

HAVE YOU SEEN ANY OF THESE CASES?

(CONTRIBUTION BY CHIEF OF MEDICAL SERVICE, BASE HOSPITAL NO. 214)

"A number of cases with unusual neurological findings have been observed at the hospital center at Savenay. They seem sufficiently important to make it desirable to ascertain whether similar cases have been met with in other hospitals in the A. E. F.

"These cases have followed rather mild infections (mumps, influenza, accessory nasal sinus infection, and possibly abortive cerebrospinal meningitis). Many of the clinical features resemble Parkinson's disease, namely masklike facies, slow, shuffling gait, with or without tremor of head and hands, moderate exaggeration of the deep deflexes, lack of timbre of voice tones, definite depression, moderate anxiety and apprehension. The clinical picture is somewhat similar to that seen after recovery from severe carbon-monoxide poisoning. It would seem most probable that these conditions are the result of degeneration of the lenticular nucleus, possibly of a toxic origin.

"The purpose of this note is to bring this condition to the attention of medical officers because it is thought that there are undoubtedly other such cases scattered through the various hospitals in the A. E. F. and it is very desirable to obtain accurate clinical observations in order that the disorder may be carefully studied and identified."

The senior consultant in neuropsychiatry would be glad to have case histories suggesting this order sent to him.

The clinical description may represent only accidental association of symptoms, but it is only by the analysis of such unexplained phenomena that syndromes are gradually crystallized into permanent clinical entities.

MONTHLY REVIEW

The month of February showed a reduction in the total cases reported of 199 as compared with the total for January. This reduction occurred in diphtheria, measles, meningitis, paratyphoid and typhoid fevers and smallpox. The greatest decrease was in typhoid fever, which showed a reduction from 338 cases in January to 171 in February. There were slight increases in dysentery and scarlet fever.

WEEKLY REVIEW

There has been a total reduction of forty-nine cases in the week. Typhoid and paratyphoid show sharp reduction to the lowest figure reported since November. Fewer new foci and organizations with new cases have been reported. There have been reductions in scarlet fever, in measles and in diphtheria. Meningitis has increased by seven cases. The incidence rate for new cases of venereal disease has risen, the rate per thousand per annum being 34.30 as compared with 34.29 last wek. Typhus fever is reported as having appeared among our troops in a small detachment at Cattaro, Dalmatia.

ANNUAL VENEREAL DISEASE RATE, PER 1,000 OF STRENGTH, FOR THE WEEK ENDING MARCH 3, 1919

Section	Rate	Section	Rate	Section	Rate
1	85	6	106	Paris	180
2	32	7	86	1st Army	12
3	10	Adv.	41	2d Army	18
4	49	Tours	104	3d Army	11
5	67	Int.	48	Divisions in S. O. S.	34
Annual rate per 1,000 for whole A. E. F.					34.30

HONORABLE DISCHARGES, MEDICAL CORPS, U. S. ARMY

NOTE.—In the following list, L. signifies lieutenant; C., captain; M., major; L. C., lieutenant-colonel; Col., colonel, and B. G., brigadier-general.

ALABAMA

Birmingham—Gaston, C. D. (L.)
Hollywood—Nye, G. E. (C.)
Luverne—Pollard, E. E. (L.)
Roanoke—Ford, C. E. (L.)
Talledega—Salter, C. L. (L.)

ARIZONA

Douglas—Adamson, E. W. (M.)

ARKANSAS

Batesville—Hinkle, C. G. (L.)
Hot Springs—Prichard, A. C. (L.)
McGehee—DeClark, W. H. (L.)
Monette—Ellis, I. W. (C.)
Tuckerman—Jamison, O. A. (L.)
Warren—Martin, R. (L.)

CALIFORNIA

Colma—Beattie, W. G. (C.)
Corning—McCann, F. E. (L.)
Glendale—Flint, J. L. (C.)
Hanford—Robbins, B. (L.)
La Manda Park—Collie, J. A. (C.)
Los Angeles—Cleeves, M. (L.)
Cunnane, P. J. (L.)
Dimon, R. B. (M.)
Heustis, J. W. (C.)
Kittle, W. F. (L.)
Lacey, J. M. (L.)
MacKenzie, W. W. (C.)
May, H. C. (L.)
McNair, W. R. (C.)
Nelson, C. V. (L.)
Tebbetts, H. B. (C.)
Thorpe, A. C. (C.)
Tower, O. I. (L.)
Walters, C. M. C. (C.)
Marysville—Gray, E. E. (L.)
Montebello—Trewhella, J. S. (C.)
Novato—Anthony, L. A. (C.)
Orange—Hall, W. H. (L.)
Marsden, S. A. (L.)
Oxnard—Tillman, F. J. (L.)
Sacramento—Watt, F. W. (L.)
San Francisco—Adler, H. F. (L.)
Green, L. D. (C.)
Hemstreet, H. H. (C.)
Seaforth, E. W. (L.)
Stirewalt, H. W. (C.)
Walker, C. A. (L.)
San Jose—Baker, M. D. (L.)
Jordan, P. A. (C.)
San Mateo—Baker, W. C. (C.)
Santa Cruz—Phillips, A. L. (L.)
Santa Paula—Herbert, G. S. (C.)
Scotia—Cottrell, E. L. (C.)
Stockton—Conzelmann, F. J. (C.)
South Pasadena—Metcalf, C. F. (C.)
Susanville—Welsh, F. D. (C.)
Wagner—Graham, L. (C.)
Yermo—MacKenzie, D. W. (C.)

COLORADO

Canon City — Wilkinson, C. H. (C.)
Cripple Creek—Dunwody, J. A. (C.)
Denver—Hollison, H. J. (C.)
Golden—Kemble, E. W. (L.)

CONNECTICUT

Hartford—Rowley, J. C. (C.)
New Haven — Giamarino, H. J. (L.)
Waterbury — McDonald, A. F. (L.)

DISTRICT OF COLUMBIA

Washington — Marbury, W. B. (C.)
Sullivan, R. Y. (M.)

FLORIDA

Freeport—Huggins, E. L. (L.)
Jacksonville—Aronovitz, S. (L.)
Holden, G. R. (C.)
Parramore, J. B. (C.)
Waas, F. J. (C.)
Lakeland—Moon, W. B. (C.)
Larkins—Franklin, G. C. (L.)
Pensacola—Hargis, J. W. (M.)
Wauchula—Taylor, J. W. (L.)
West Palm Beach—Proctor, H. L. (L.)

GEORGIA

Athens—Holliday, J. C. (L.)
Atlanta—Folmor, J. O. (L.)
Young, W. C. (L.)
Camilla—Newson, E. T. (C.)
Ellijay—Cox, C. G. (L.)
Fort Valley—Brown, V. L. (C.)
Greensboro—Adams, E. G. (C.)
Macon—Adams, H. H. (C.)
Diehl, J. E. (L.)
Walker, C. H. (L.)
Maysville—Taylor, O. (L.)
Moultrie—Hunter, C. W. (C.)
Norman Park — Whittendale, W. H. (L.)
Odessadale—Williams, V. G. (L.)
Savannah—Norton, W. A. (L.)
Taylor, L. B. (M.)
Sycamore—Moore, J. C. (L.)
Ty Ty—Pittman, J. S. (L.)
Valdosta—Scruggs, C. G. (L.)

ILLINOIS

Aurora—Elliston, L. B. (L.)
Belleville—Gunn, J. C. (C.)
Bloomington—Shultz, C. E. (C.)
Cambridge—Conser, W. H. (L.)
Chicago—Berkowitz, J. S. (L.)
Bryant, H. E. (L.)
Harvey, J. R. (L.)
Haynes, H. A. (L.)
Joyce, P. V. (L.)
MacNamara, J. R. (C.)
Porter, W. A. (C.)
Reams, A. L. (L.)
Reinhardt, C. H. (L.)
Rolnick, H. C. (L.)
Smith, J. R. (L.)
Zolia, N. (L.)
Cicero—Naikelis, S. (L.)
Cornell—Coen, C. M. (L.)
Downer's Grove—Puffer, M. L. (C.)
Elgin—Fell, E. W. (M.)
Fairbury—Brewer, C. S. (C.)
Mattoon—Kleckner, R. E. (C.)
Moline—Carlton, C. L. (C.)

Mulkeytown — Phillips, F. M. (L.)
Newark—Langum, I. G. (L.)
Oglesby—Cressman, R. G. (M.)
Springfield—Deal, J. F. (L.)
Hibbe, C. (L.)

INDIANA

Alfordsville—Winklepleck, A. M. (L.)
Bryant—Rupel, E. (L.)
Cross Plains—Ryan, C. D. (L.)
Farmersburg—Odell, I. H. (L.)
Fort Wayne—Morris, I. E. (C.)
Indiana Harbor — Levin, E. L. (L.)
Indianapolis—Bayer, C. F. (C.)
Hamer, H. G. (L.)
Hodges, F. (C.)
Shimp, H. A. (C.)
Woods, C. E. (L.)
Kramer—Little, E. O. (C.)
Muncie—Bowles, H. S. (L.)
Roanoke—Wilking, S. V. (M.)
Sullivan—Thompson, W. N. (C.)

IOWA

Carlisle—Carey, L. O. (L.)
Council Bluffs—Hennessy, M. C. (L.)
Des Moines—Kessell, J. E. (C.)
Lehman, E. W. (L.)
Lynch, R. J. (C.)
Throckmorton, R. F. (C.)
Fort Dodge—Beeh, E. F. (L.)
Fort Madison—Traverse, I. W. (C.)
Gilbert—Hoffman, W. L. (M.)
Neola—Sebard, G. (C.)
Ottumwa—Anthony, W. F. (C.)
Red Oak—Young, R. M. (M.)
Stockport—Graber, F. J. (L.)
Winthrop—Householder, H. A. (L.)
Zwingle—Wheeler, E. R. (L.)

KANSAS

Brownell—Combs, J. W. (C.)
Coats—Campbell, J. R. (L.)
El Dorado—Boudreau, C. E. (C.)
Emporia—Hunt, W. D. (C.)
Florence—Wagar, L. S. (C.)
Hutchinson—Mayfield, C. (L.)
Kansas City—Coburn, C. E. (C.)
Fulton, J. A. (L.)
Parsons—Osburn, W. F. (C.)
Pretty Prairie—Taylor, E. C. (C.)
Salina—Neptune, J. W. (C.)
Topeka—Sams, L. V. (C.)
Wichita—Seydell, E. M. (C.)

KENTUCKY

Benton—Washburn, L. L. (C.)
Buckhorn—Abshear, Z. M. (L.)
Buffalo—Wyatt, I. L. (C.)
Elizabethtown—Alvey, W. F. (C.)
Franklin—Venable, C. L. (M.)
Lockport—Leslie, W. W. (C.)
Louisville—Barnes, C. W. (C.)
Haymond, R. G. E. (C.)
Hufnagel, C. J. (C.)
Morton, D. C. (M.)
Marcellus—Rose, S. T. (L.)
Perryville—Hopper, W. O. (C.)
Princeton—Jones, J. R. (L.)
Salem—Haylen, P. L. (L.)
Tompkinsville—Duncan, R. F. (C.)
Waverly Hill — Claypool, D. P. (C.)

LOUISIANA

Shreveport — Burchfield G. W. (L.)

MAINE

Portland—Mitchell, A., Jr. (C.)

MARYLAND

Baltimore—Bridgman, E. W. (C.)
Kieffer, G. S. M. (L.)
Leopold, E. J. (C.)
Reid, H. W. (L.)
Stickney, G. L. (C.)
Wentz, M. C. (L.)

MASSACHUSETTS

Boston—Flagg, H. H. (L.)
Leary, A. J. (L.)
McCauley, A. A. (C.)
McKenna, P. G. (C.)
Walker, W. W. (L.)
Haverhill—Capeles, T. F. (L.)
Lowell — O'Sullivan, F. A. M. (L.)
Newton—Macomber, D. (C.)

MICHIGAN

Detroit—Bell, J. N. (C.)
Condit, L. I. (C.)
Hyman, M. M. (L.)
Kalamazoo—Henwood, A. E. (C.)
Lansing—Murphy, C. H. (C.)
Laurium—Rhines, J. (L.)
Pontiac—Bachelder, F. S. (C.)

MINNESOTA

Campbell—Wray, W. E. (M.)
Dunnell—Anderson, N. P. (L.)
Frazee—Barton, E. R. (C.)
Grand Rapids—Hursh, M. M. (C.)
Madelia—Grimes, H. B. (C.)
Minneapolis—Gillmore, E. G. (L.)
Oetring, H. (L.)
Stoeckinger, J. A. (L.)
Tenbroeck, L. L. (M.)
Moorhead—Gosslee, G. L. (C.)
Redwood—McPheeters, H. O. (L.)
State Sanatorium—Brelsford, G. (L.)

MISSISSIPPI

Jackson—Neal, L. B. (C.)
Rembert, G. W. F. (C.)
Meridian—Bourdeaux, T. D. (C.)

MISSOURI

Cape Girardeau—Berry, J. W. (C.)
Cole Camp—Van Allen, J. P. (C.)
Columbia—Sneed, C. M. (C.)
Hannibal—Winn, R. M. (L.)
Kansas City—Castelaw, R. E. (C.)
Louisiana—Unsell, J. B. (C.)
Nelson—Shuck, L. I. (L.)
Pattonsburg—Hedges, F. (C.)
Portage des Sioux—Barnard, C. A. (L.)
Salisbury—Hawkins, G. W. (L.)
St. Joseph—Potter, C. A. (L.)
St. Louis—Bauman, C. M. (C.)
Benson, B. G. (C.)
Boehm, E. (L.)
Brashear, H. C. (L.)
Murphy, J. P. (L.)
Wilhelmi, O. J. (L.)
Warsaw—Savage, H. G. (C.)

MONTANA

Browning—Rosin, C. M. (L.)
Butte—Knight, A. C. (C.)
Tremblay, J. L. (C.)
Missoula—Tobinski, J. J. (L.)
Roundup—Pigott, J. T. (L.)

NEBRASKA

Clarks—Little, L. (C.)
Cozad—Sheets, E. (L.)
Eddyville—Kile, J. B. (L.)
Lincoln—Liston, O. E. (L.)
Newport—Dodd, C. Q. (L.)
Omaha—Allen, J. F. (C.)
Superior—Trowbridge, J. A. (C.)

NEVADA

Ely—Adams, A. F. (C.)

NEW HAMPSHIRE

Lancaster—Cleasby, H. W. (C.)

NEW JERSEY

Camden—Marcy, F. W. (C.)
Deerfield Street—Cooper, H. L. (C.)
Webb, H. P. (L.)
Newark—Mullin, R. J. (C.)
Preston, P. B. (L.)
Passaic—Kroll, A. J. (L.)
Trenton—Taylor, W. A. (L.)
Union Hill—Justin, A. W. (L.)
West Hoboken—Klaus, H. F., Jr. (L.)

NEW MEXICO

Carrizozo—Lucas, R. T. (C.)
Las Cruces — Vandevere, W. E. (L.)

NEW YORK

Bath—Hill, R. C. (C.)
Brooklyn—Blinder, J. (L.)
Fricke, L. W. (L.)
Holly, I. M. (C.)
Jessup, E. C. (C.)
Rivkin, M. (L.)
Woolsey, W. C. (M.)
Buffalo—Grotz, C. (L.)
Stowe, J. G. (C.)
Flushing—Swan, D. J. (L.)
Forest Hills—Keyes, E. L., Jr. (Col.)
Hicksville—Freundlich, T. (L.)
Ithaca—Lee, W. F. (L.)
Malone—Allison, B. R. (C.)
New York—Barr, D. P. (L.)
Coulter, C. B. (C.)
Cunningham, W. F. (C.)
Dillon, C. J. (C.)
Elser, W. J. (L. C.)
Engelson, J. E. (C.)
Grace, R. V. (C.)
Herman, H. (L.)
Keil, F. C. (L.)
Kennedy, R. H. (L.)
Kraner, J. (L.)
McCreery, J. A. (M.)
Neuhof, H. (C.)
Newman, D. (L.)
Parsons, W. B., Jr. (C.)
Patton, G. F. (L.)
Pellini, E. J. (L.)
New York—Peters, J. P., Jr. (C.)
Rosenthal, B. (L.)
Seff, I. (L.)
Shaituck, H. F. (L.)
St. John, F. B. (M.)
Stevens, A. R. (M.)
Tull, E. E. (M.)
Tyson, C. J. (C.)
Vermilye, H. N. (C.)
Weems, B. F., Jr. (C.)
Whitman, A. (C.)
Patchogue—Overton, F. (C.)
Port Chester—Berger, G. (L.)
Pottersville—Bibby, G. (L.)
Rochester—Gibson, W. J. (L.)
Kennedy, E. W. (C.)
Standish—O'Keefe, E. B. (L.)
Syracuse—Conan, N. J. (L.)
Troy—Hull, A. J. (C.)

NORTH CAROLINA

Waxhaw—Guin, L. E. (L.)

NORTH DAKOTA

Grand Forks—Peake, A. (L.)
Hazen—Brandes, H. A. (L.)

OHIO

Bellefontaine — Kaylor, F. B. (L.)
Bryan—Solier, F. E. (C.)
Bucyrus—Carlisle, W. G. (L.)
Cincinnati—Amidon, C. S. (L.)
Van Voast, R. A. (C.)
Wolf, S. (L.)
Cleveland — Chamberlain, W. S. (C.)
Cutler, F. E. (C.)
Davidson, P. F. (C.)
Garrett, E. W. (L.)
O'Brien, M. A. (L.)
Columbus — Junkermann, E. B. (C.)
Williams, T. R. (L.)
Greenville—Sarver, A. F. (L.)
Hudson—Miller, G. A. (L.)
Jackson—Caldwell, R. W. (L.)
Kelleys Island—Manning, G. W. (L.)
Lima—Vorbau, W. H. (L.)
Medina—Strong, R. G. (L.)
Piqua—Spencer, R. D. (L.)
Salem—McGeorge, J. M. (L.)
Springfield—Hamma, C. B. (C.)
Swanton—Brailey, H. E. (L.)
Toledo—Quick, R. H. (C.)
Weston—Aurand, G. C. (L.)
Youngstown—Dixon, F. W. (L.)
Hanculf, A. P. (L.)
Ryall, W. W. (C.)
Zanesville—Higgins, C. H. (C.)

OKLAHOMA

Bristow—King, E. W. (L.)
Byron—Harris, G. G. (L.)
Cyril—Coker, G. B. (L.)
Kusa—Thompson, W. A. (L.)
Muskogee—Fryer, S. E. (C.)
Newkirk—Hazen, A. L. (C.)
Okmulgee—Randel, H. O. (L.)
Weatherford—Gordon, J. M. (C.)

OREGON

Crane—Vincent, L. H. (L.)
Dallas—Tharp, H. Z. (L.)
Haines—Biswell, R. (C.)
Portland—Abele, J. G. (C.)
Moran, P. (L.)
Seaside—Hagmeier, O. C. (C.)

PENNSYLVANIA

Bellevue—Shepard, W. B. (L.)
Bloomsburg — McHenry, D. B. (L.)
Conyngham—Koons, R. O. (L.)
Elizabeth—Rowland, I. E. (L.)
Hazleton—Dyson, J. R. (M.)
Kane—Cox, M. (L.)
Lancaster—Kinzer, H. C. (L.)
Linglestown—Shenk, F. L. (C.)
Marion Center—Stewart, J. M. (C.)
Monaca—Mackall, M. M. (L.)
Norristown—Peters, T. (C.)
Osterburg—Cook, T. W., Jr. (L.)
Philadelphia—Becker, C. (C.)
Berg, A. P. (L.)
Borow, B. (L.)
Clapp, G. H. (C.)
Keilty, R. A. (M.)
Lukens, R. M. (L.)
Righter, L. L. (L.)
Roepke, H. F. (L.)
Ryan, W. C. (C.)
Silverman, A. (L.)
Walther, R. A. (L.)
Wray, W. S. (C.)
Zimlick, A. J. (L.)
Pittsburgh—Hesser, A. J. (C.)
Morris, A. F. B. (C.)
Wakefield, C. W. (L.)
Reading—Frankhauser, A. F. (L.)
Scranton—Falkowsky, C., Jr. (C.)
Shenandoah—Reddy, W. J. (L.)
Scanlan, W. J. (C.)
Terre Hill—Royer, J. W. (C.)
Warren—Stewart, P. B. (C.)
Woodlawn—Mellon, G. W. (L.)

RHODE ISLAND

Bristol—DeWolf, H. (L.)
Providence—Bannon, J. W. (L.)
Copenhaver, N. H. (L.)
Streker, W. S. (L.)

SOUTH CAROLINA

Abbeville—Evans, J. E. (C.)
Anderson—Dean, S. C. (L.)
Brunson—Mole, J. W., Jr. (L.)
Cowpens—Scott, H. T. (L.)
Glenn Springs—Smith, D. H. (L.)
Greenwood—Blake, C. H. (L.)
Marion—Howell, C. S. (L.)
Saluda—Boozer, H. T. (L.)

SOUTH DAKOTA

Parker—Newby, H. D. (L.)
Spearfish—Hare, C. (L.)

TENNESSEE

Benton—McClary, S. B. (L.)
Chattanooga—Johnson, J. W. (C.)
Eastlake—Stem, L. T. (L.)
Memphis—Buck, K. M. (L.)
Smythe, F. (L.)
Nashville—Blaydes, J. E. (L.)
Caldwell, J. W. (C.)
Cowan, S. C. (L.)
Griffin, C. G. (L.)
Manier, J. O. (L.)
McClure, J. H. (C.)
Tharp, M. (L.)
Trenton—McRee, W. C. (C.)
Union City—Park, I. O. (L.)

TEXAS

Abilene—Hollis, L. W., Jr. (L.)
Blooming Grove—Wilkinson, J. A. (L.)
Bonham—McDaniel, H. A. (C.)
Dallas—Irvine, E. J. (L.)
DeKalb—Crew, C. S. (L.)
Fort Worth—Bond, T. B. (L.)
Houston—Dawes, R. (C.)
Milford—Rogers, H. E. (L.)
Post—Williams, D. C. (C.)
Rosstown—Johnston, W. M. (L.)
San Antonio—Russ, W. B. (M.)
Saron—Conley, J. W. (C.)
Strawn—Cromeans, F. E. (L.)
Waco—Aynesworth, H. T. (C.)
Waxahachie—Sweatt, O. P. (L.)
Wichita Falls—Glover, M. H. (L.)
Wortham—McLendon, T. P. (L.)

UTAH

Ogden—Clark, F. G. (C.)
Rich, L. F. (C.)

VERMONT

Burlington—Gannon, C. L. (L.)
Johnsburg—Burke, R. H. (L.)
Orleans—Wells, R. M. (L.)

VIRGINIA

Covesville—Nelson, F. P. (L.)
Farmville—Hardy, T. G. (L.)
North Emporia—Mahood, H. B. (C.)
Rustburg—Watkins, O. L. (L.)
Swoope—Hartman, W. F. (C.)

WASHINGTON

Anacortes—Brooks, S. G. (C.)
Bremerton—Smythe, E. L. (L.)
Montesano—Fitz, J. H. (C.)
Moxee City—Cocklin, W. K. (L.)
Olympia—Murphy, G. E. (C.)
Pomeroy—Rhodes, E. J. (L.)
Seattle—Davidson, F. F. (M.)
Joiner, W. C. (L.)
Palmer, W. G. (C.)
Poska, A. (L.)
Truehlood, D. V. (C.)
Weichbrodt, I. A. (C.)
Sunnyside—Fordyce, W. E. (L.)
Tacoma—Burke, G. (L.)
Yocom, J. R. (C.)

WEST VIRGINIA

Brown—Chapman, J. H. (C.)
Charleston—Shirkey, W. F. (L.)
Clendenin—Caldwell, M. E. (C.)
Mason—Sayre, R. F. (L.)
Parkersburg—Richardson, W. B. (L.)
Ridgeley—Cowherd, J. K. (C.)
Wheeling—Clovis, C. H. (L.)

WISCONSIN

Ladysmith — Stephenson, W. L. (C.)
LaFarge—Haggerty, E. E. (L.)
Madison—Drane, R. (C.)

Mellen—Lockhart, C. W. (L.)
Milton Junction—Coon, W. W. (L.)
Milwaukee—Bach, R. J. (L.)
Podlasky, H. B. (C.)
Princeton—Fortner, W. H. (L.)
Racine—Conley, J. G. (L.)
Superior — Broghammer, F. J. (L.)
Viroqua—Sathe, M. R. (L.)

MEDICAL OFFICERS, U. S. NAVY, RELIEVED FROM ACTIVE DUTY

CALIFORNIA

Berkeley—Stearns, A. W.
Holtville—Mosher, W. F.
Lodi—Bolinger, H. J.
Los Angeles—Avery, L. G.
Boller, P.
Ferbert, J. C.
Josephs, L.
San Francisco—Athay, R. M.
Castelhun, P.
Langecker, H. L.
Ventura—Homer, R. W.

DELAWARE

Centerville—Crossan, J. W.

GEORGIA

Atlanta—Donaldson, H. R.

ILLINOIS

Chicago—Carroll, C. H.
Knapp, J. L.
Probstein, J.
Rowley, W. N.
Lake Forest—Orcutt, A. H.

IOWA

Iowa City—Myers, L. L.
Lecompte—Freeman, O. L.

KANSAS

Rosedale—Clasen, A. C.

MASSACHUSETTS

Boston—Brine, E. L.
Hamilton, A. J. A., Jr.
New Bedford—Lipsitt, C. S.
Pittsfield—Cook, P. C.

MONTANA

Rapelje—Robb, H. F.

NEBRASKA

David City—Beede, C. E.

NEW JERSEY

Bayonne—Klein, E.
Trenton—Williams, G. W.

NEW YORK

Brooklyn—Gibson, G. M.
Langs, L.
Nexsen, H.
Dunkirk—Irving, G. O. R.
New York—Anthony, D. H.
Bickley, E. B.
Cooney, J. D.
Harper, W. H.
MacKenzie, G. M.
Schulhofer, J.
Steinhauser, C.

NORTH CAROLINA

Scotland Neck—Smith, C. T.

OHIO

Columbus—Williams, F. O.
Dayton—Roop, W. O.
Saint Marys—Shuffleton, F. A.

PENNSYLVANIA

Philadelphia—Cox, R. M.
Manasses, J. L.
Rosen, M.
Siggins, J. C.
Pittsburgh—Sheppard, T. T.

RHODE ISLAND

Providence—Gilpatrick, L. S.
Hussey, F. V.

SOUTH CAROLINA

Timmonsville—Smith, H. P.

TENNESSEE

Nashville—Simons, I.

WASHINGTON

Seattle—Thomson, C. H.
Tacoma—Henry, J. E.

WISCONSIN

Menomonie—Nedry, G. C.

ORDERS TO OFFICERS OF THE MEDICAL CORPS, U. S. ARMY

Alabama

To Camp Gordon, Ga., base hospital, from Camp Sheridan, Major J. E. DEDMAN, Birmingham.

To report to the commanding general, Southern Department, from Sacramento, Calif., Major J. R. OSWALT, Union Springs.

Arkansas

To Fort Sill, Okla., base hospital, from Camp Pike, Lieut. S. F. HOGE.

The following order has been revoked: *To report to the commanding general*, Southeastern Department, from Camp Joseph E. Johnston, Capt. E. E. POYNOR, Green Forest.

California

To Camp Kearney, Calif., base hospital, from Camp Fremont, Capts. M. H. ROSS, Los Angeles; E. N. REED, Santa Monica; Lieuts. C. D. SWEET, Fresno; N. M. SALTER, Williams.

To Camp Lee, Va., from Seven Pines, Capt. F. M. TROUT, Los Angeles.

To Camp Pike, Ark., from Camp Logan, Lieut. L. C. SCULLY, San Jose.

To Camp Sherman, Ohio, base hospital, from Camp McClellan, Capt. W. P. MILLIKEN, Oakland.

To Camp Travis, Texas, base hospital, from Camp Dix, Capt. W. W. WASHBURN, San Francisco.

To Camp Travis, Texas, base hospital, from Camp Kearney, Capts. C. J. TEASS, H. O. VON DER LEITH, San Francisco.

To report to the commanding general, Western Department, from Vancouver Barracks, Major G. NEWLOVE, Calerico.

Colorado

To Fort Bliss, Texas, base hospital, from Fort Des Moines, Lieut. S. S. GOLDHAMMER, Denver.

District of Columbia

To Fort Sheridan, Ill., from Long Beach, Lieut. C. B. CONKLIN, Washington.

To Washington, D. C., Surgeon-General's Office, Col. W. H. WILMER, Washington.

The following orders have been revoked: *To Canal Zone*, from Army Medical School, Col. E. B. VEDDER. *To Fort McHenry, Md.*, from Camp McClellan, Lieut. H. A. BAUGHN, Washington.

Florida

The following order has been revoked: *To report to the commanding general*, Southeastern Department, from Camp Joseph E. Johnston, Capt. J. M. IRWIN, Crystal River.

Georgia

To Tullytown, Pa., from Camp Greene, Capt. W. W. CORNOG, Lavonia.

Hawaii

To Newport News, Va., from Camp Hancock, Major J. B. LUDY, Honolulu.

Illinois

To Camp Jackson, S. C., to examine the command for nervous and mental diseases, from Camp Sheridan, Capt. J. K. POLLOCK, Elgin.

To Camp Lewis, Wash., base hospital, from Camp McClellan, Capt. W. S. CONN, Naperville.

To Camp Upton, N. Y., base hospital, from Camp Hancock, Capt. W. J. RIDEOUT, Freeport.

To Camp Wadsworth, S. C., from Camp McClellan, Lieut. R. M. CARPENTER, St. Charles.

To Camp Zachary Taylor, Ky., base hospital, from Camp Sheridan, Lieut. M. LANDO, Chicago.

To Cape May, N. J., from Camp Beauregard, Capt. E. LaMOTHE, Chicago.

To Chicago, Ill., from Fort Benjamin Harrison, Capt. P. P. HASLITT, Marshall.

To Denver, Colo., from Markleton, Lieut. R. G. PESCHMAN, Chicago.

To East View, N. Y., from Camp Devens, Lieut. G. M. LANDAU, Chicago.

To Fredericksen, N. J., from Fort Sheridan, Lieut. J. P. O'NEIL, Highland Park.

To Jefferson Barracks, Mo., from Camp Hancock, Lieut. N. C. STAM, Chicago.

To Jefferson Barracks, Mo., from Camp Meade,, Lieut. L. M. HAYES, Alton.

To Oteen, N. C., from Camp Beauregard, Major T. P. WARD, Mount Vernon.

To report to the commanding general, Central Department, from Camp Grant, Capt. G. T. JORDAN, Chicago.

To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion *to his proper station*, from Colonia, Lieut. D. C. SIGWORTH, Chicago.

To St. Louis, Mo., from Fort Des Moines, Lieut. T. J. ECHERER, Chicago; from Newport News, Capt. D. E. EGAN, St. Charles.

To San Francisco, Calif., Letterman General Hospital, from Fort Oglethorpe, Capt. W. H. GALLAND, Chicago.

To Walter Reed General Hospital, D. C., from Fort Snelling, Lieut. H. B. THOMAS, Chicago.

To Washington, D. C., Surgeon-General's Office, from Camp Dix, Major M. L. GOODKIND, Chicago.

Indiana

To Fort Benjamin Harrison, from Camp Hancock, Lieut. E. F. SMALL, Decker.

To Fort Sheridan, Ill., from Camp A. A. Humphreys, Major O. A. NEWHOUSE, Montezuma.

To Hoboken, N. J., from Fort Oglethorpe, Lieut. W. H. MIKESCH, Hammond.

To report to the commanding general, Central Department, from Camp Lewis, Capt. G. W. WILSON, Mount Vernon.

To San Francisco, Calif., Letterman General Hospital, from Camp Dix, Capt. E. B. CHENOWETH, Nineveh; from Camp Fremont, Lieut. C. E. PETERS, National Military Home.

To St. Louis, Mo., from Camp Dix, Major G. W. NEWELL, Peru.

The following order has been revoked: *To Fort Oglethorpe* for instruction, Lieut. B. M. HUTCHINSON, Mishawaka.

Iowa

To Fort Sheridan, Ill., from Fort Des Moines, Capt. F. R. HOLBROOK, Des Moines.

Kentucky

To Hampton, Va., Langley Field, from Richmond, Lieut. C. P. HARROD, South Park.

Maryland

The following order has been revoked: *To Camp Grant, Ill.*, base hospital, Capt. W. A. SMITH, Webster Groves.

Massachusetts

To Army Medical School for instruction, from Camp Dix, Capt. H. C. MARBLE, Boston.

To Biltmore, N. C., from Camp Dix, Major J. W. LANE, Boston.

To Boston, Mass., from Camp Devens, Lieut. C. W. PEABODY, Boston; from Camp Dix, Capt. G. CLYMER, Boston; from Camp Upton, Capt. C. T. PORTER, Boston.

To Fort Hamilton, N. Y., from New Castle, Del., Capt. W. Y. ROBERTS, Boston.

To Fort Hamilton, N. Y., from New Castle, Del., Capt. W. Y. FOX, Taunton.

To Hoboken, N. J., from Eastview, Lieut. G. L. CHAFFIN, Boston.

To Houston, Texas, Ellington Field, from Everman, Lieut. L. J. ULLIAN, Boston.

To Newport News, Va., from New Haven, Lieut. H. ZIMMERMAN, Springfield.

To Newport News, Va., from Camp Upton, Capt. R. A. GREENE, Palmer.

To Otisville, N. Y., from Camp Custer, Lieut. J. J. COSGROVE, Westfield; from Markleton, Lieut. H. M. STEWART, Pittsfield.

To report to the commanding general, Northeastern Department, from Boston, Major B. H. METCALF, Winthrop.

Michigan

To Denver, Colo., from Markleton, Capt. A. M. WEHENKEL, Detroit.

To Detroit, Mich., from Camp Custer, Capt. E. O. SAGE, Detroit.

To Fort D. A. Russell, Wyo., as tuberculosis examiner, from New Haven, Lieut. L. P. SCHROEDER, Calumet.

To Fort Logan H. Roots, Ark., from Camp Beauregard, Lieut. R. G. KARSHNER, Big Rapids.

To Mineola, N. Y., from Garden City, Lieut. W. A. DEFNET, Detroit.

To Newport News, Va., from Plattsburg Barracks, Major J. T. SAMPLE, Saginaw.

To report to the commanding general, Western Department, from Camp Dix, Lieut. S. M. WELLS, Jr., Grand Rapids.

Minnesota

To Camp Benning, Ga., as camp surgeon, from Camp Meade, Lieut.-Col. J. S. WHITE, St. Paul.

To Washington, D. C., Surgeon-General's Office, from Hoboken, Lieut.-Col. L. G. ROWNTREE, Minneapolis.

Mississippi

To Seven Pines, Va., from Camp Wadsworth, Lieut. C. H. HARRISON, Philadelphia.

Missouri

To Camp McClellan, Ala., from Jackson Barracks, Capt. C. A. HOBERECHT, St. Louis.

To Houston, Texas, Ellington Field, from Camp John Wise, Lieut. P. C. DAVIS, Madison.

To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion *to Walter Reed General Hospital, D. C., for instruction*, and on completion *to his proper station*, from Camp Zachary Taylor, Lieut. C. C. KLEINSCHMIDT, St. Louis.

To Washington, D. C., Surgeon-General's Office, from Camp Travis, Capt. D. E. SCHMALHORST, St. Louis; from Hoboken, Col. N. ALLISON, St. Louis.

Nebraska

To Camp Grant, Ill., base hospital, from Camp Dix, Lieut. O. E. COLEMAN, Ainsworth.

New Hampshire

To Camp Devens, Mass., base hospital, from Fort McPherson, Capt. R. S. PERKINS, Exeter.

New Jersey

To Camp Meade, Md., base hospital, from Camp McClellan, Lieut. W. G. SHEMELEY, Jr., Camden.

To Colonia, N. J., from Camp Devens, Lieut. D. A. CURTIS, Paterson.

To Denver, Colo., from Camp Dix, Capt. T. W. HARVEY, Jr. Orange.

To Fox Hill, Staten Island, N. Y., from Camp Logan, Lieut. L. D. WHITNEY, Belleville.

The following order has been revoked: *To South Baltimore, Md.*, from Lawrenceville, N. J., Capt. C. BROWNE, Princeton.

New York

To Camp Dix, N. J., from Panama Canal, Major L. LOUGHRAN, New York. As orthopedic surgeon, from Army Medical School, Lieut. J. W. SMITH, Brooklyn.

To Camp Sherman, Ohio, base hospital, from Camp Wadsworth, Lieut. J. C. O'NEILL, New York.

To Camp Upton, N. Y., base hospital, from Fort Oglethorpe, Major N. P. BREED, Douglaston; from Lakewood, Capt. T. D. BUCHANAN, New York.

To Camp Upton, N. Y., base hospital, from Hoboken, Capt. H. R. STONE, New York.

To Camp Wadsworth, S. C., base hospital, from Camp Hancock, Capt. J. C. DEVRIES, Brooklyn.

To Camp Zachary Taylor, Ky., base hospital, from Camp Sherman, Lieut. F. N. POTTS, Buffalo.

To Camp Wadsworth, S. C., from Camp Upton, Lieut.-Col. L. H. POUST.

To Colonia, N. J., from Camp Jackson, Major F. T. ROBESON, New York.

To Eastview, N. Y., from Camp Upton; Major L. B. MEYER, New York.

To Fort McPherson, Ga., from San Juan, Major E. W. LEE, New York.

To Fort Sheridan, Ill., from Williamsbridge, Major D. F. MAGUIRE.

To Fox Hills, N. Y., from Camp McClellan, Lieut. F. W. HOLCOMB, New York.

To Hoboken, N. J., from Army Medical School, Capt. D. C. PATERSON, Yonkers; from Camp Lee, Lieut. I. GREENBERG, New York; from Colonia, Lieut. W. W. LASHER, New York.

To Jefferson Barracks, Mo., from Camp Lee, Lieut. N. W. GETMAN, Oneonta.

To Newport News, Va., from Camp Meade, Capt. T. I. TOWNSEND, Binghamton.

To Northeastern Department, from Camp McClellan, Capt. H. E. MEEKER, New York.

To Pittsburgh, Pa., from Camp Dix, Lieut. H. J. McDONALD, Buffalo.

To Rockefeller Institute for instruction, and on completion *to Walter Reed General Hospital, D. C.*, for instruction, and on completion *to his proper station*, from Biltmore, Capt. H. L. WENNER, Jr., New York; from Camp Lee, Lieut. C. COLDMAN, Brooklyn.

To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion *to Walter Reed General Hospital, D. C.*, for instruction, and on completion *to Army Medical School*, for instruction, from Camp Hancock, Lieut. C. A. LEE, Brooklyn. On completion *to his proper station*, from Camp Lee, Lieut. C. W. SYMONDS, New York. On completion *to Hoboken, N. J.*, from Camp Meade, Major A. H. PARSONS, Great Neck.

To Washington, D. C., Surgeon-General's Office, from New York, Lieut.-Col. W. J. ELSER, New York.

The following order has been revoked: *To report to the commanding general*, Northeastern Department, from Camp McClellan, Capt. H. E. MEEKER, New York.

Ohio

To Detroit, Mich., from Walter Reed General Hospital, Capt. C. L. STOREY, Oberlin.

To Fort Sheridan, Ill., from Walter Reed General Hospital,, Capt. C. L. STOREY, Oberlin.

To Hoboken, N. J., from Camp Dix, Lieut. B. HIBBARD, Lima.

To Jefferson Barracks, Mo., from Camp Hancock, Lieut. H. BENUS, Cincinnati; from Camp Pike, Lieut. R. L. KUNKLE, Piqua.

To report to the commanding general, Eastern Department, from Camp Dix, Lieut. O. B. BIERN, Cincinnati.

To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion *to Walter Reed General Hospital, D. C.*, for instruction, and on completion *to his proper station*, from Camp Sherman, Capt. C. D. HAUSER, Youngstown.

To St. Louis, Mo., from Camp McClellan, Lieut. C. H. CHASE, Cleveland; from Camp Sheridan, Lieut. J. J. JENNIE, Cincinnati.

Oklahoma

To Akron, Ohio, from Indianapolis, Lieut. W. M. SYKES, Ramona.

To Buffalo, N. Y., from Fort Caswell, Lieut. H. C. BRADLEY, Oklahoma.

To Camp Pike, Ark., from Camp Hancock, Lieut. J. L. MINER, Beggs.

To Hoboken, N. J., from Camp Dix, Lieut. M. V. STANLEY, Tulsa.

Pennsylvania

To Army Medical School for instruction, from Camp Dix, Lieut. E. B. SLOTERBECK, Monessen.

To Biltmore, N. C., from Camp Hancock, Capt. R. G. TORREY, Philadelphia.

To Camp Bragg, N. C., from Camp Logan, Lieut. F. W. GUSTITES, Wilkes-Barre.

To Camp Dodge, Iowa, base hospital, from Camp Dix, Major E. W. MEREDITH, Pittsburgh.

To Camp Gordon, Ga., base hospital, from Camp Hancock, Capt. G. P. ARD, Woodward.

To Fort McHenry, M.D., from San Francisco, Capt. C. N. HAINES, Sayre.

To Fort McPherson, Ga., from Camp Jackson, Capt. A. E. BARTON, Lewisburg.

To Fort Ontario, N. Y., from Danville, Lieuts. H. A. WICK, New Bethlehem; J. A. MERIWETHER, Philadelphia.

To Fox Hills, Staten Island, New York, from Camp Dix, Lieut.-Col. J. H. JOPSON, Philadelphia; from Camp Meade, Lieut. H. L. BATES, Philadelphia.

To Hoboken, N. J., from Fort McHenry, Capt. R. E. STIFEL, Pittsburgh.

To Lakewood, N. J., from Camp Dix, Capt. J. H. GALBRAITH, Altoona.

To Newport News, Va., from Camp Jackson, Capt. A. D. FINLAYSON, Warren.

To St. Louis, Mo., from Camp Dix, Lieut. J. R. BROBST, Bloomsburg.

Tennessee

To Army Medical School for instruction, from Camp Dix, Lieut. E. L. ANDERSON, Memphis.

To Camp Kearney, Calif., base hospital, from Camp Fremont, Capt. W. A. CASHION, Fayetteville.

To Camp Lee, Va., as tuberculosis examiner, from Montgomery, Lieut. E. C. SEALE, Nashville.

To Camp Pike, Ark., base hospital, from Camp Sheridan, Major W. H. BALDWIN, Memphis.

Texas

To Arcadia, Fla., Carlstrom Field, from Dallas, Lieut. S. G. ODOM.

To Camp Bowie, Texas, base hospital, from Fort McPherson, Lieut. W. H. COOLEY, Sarita.

To Everman, Texas, Barron Field, from Camp Dix, Major A. F. BEVERLY, Austin.

To Fort McPherson, Ga., from Newport News, Major J. H. GAMBRELL, Dallas.

To Fort Sam Houston, Texas, base hospital, from Camp Dix, Capt. J. H. SHELTON, Kingsville.

To Fort Sam Houston, Texas, base hospital, from Camp Dix, Capt. F. E. HUDSON, Anson; from Camp Sheridan, Capt. J. C. MICHAEL, Houston.

To Fort Sheridan, Ill., from Chicago, Lieut. H. O. JONES, Denison.

To Hoboken, N. J., from Camp Dix, Major W. H. HARGIS, San Antonio; from Camp Logan, Lieut.-Col. J. M. WILLIS.

To Houston, Texas, Ellington Field, from Camp John Wise, Capt. W. O. STEPHENSON, Dallas; from Dallas, Lieut. H. M. ANDREW; from Middletown, Capt. O. P. GOODWIN, Lamasco.

To Newport News, Va., from Pig Point, Lieut. R. L. DINWIDDIE, San Antonio.

To report to the commanding general, Southern Department, from Camp Logan, Capt. S. A. McCONNELL, Franklin.

Utah

To St. Louis, Mo., from Denver, Lieut. L. S. MERRILL, Brigham.

Virginia

To Camp Dix, N. J., as sanitary inspector, from Camp Sheridan, Major T. R. MARSHALL, Ware Neck.

To Camp Gordon, Ga., base hospital, from Camp Hancock, Major W. J. OLDS, Front Royal.

To Carlisle, Pa., from Camp Abraham Eustis, Major P. C. RILEY, Markham.

To Fort Ontario, N. Y., from Danville, Lieut. G. G. HANKINS, Phoebus.

The following order has been revoked: *To report to the commanding general*, Northeastern Department, from Camp McClellan, Lieut. S. D. WILLIAMS, Norfolk.

West Virginia

To Baltimore, Md., from Camp Hancock, Lieut. W. S. CRAWFORD, Follansbee.

Wisconsin

To Camp John Wise, Texas, from San Antonio, Capt. J. H. FOWLER, Lancaster.

To Fort D. A. Russell, Wyo., as tuberculosis examiner, from Camp Lewis, Capt. H. M. COLEMAN, Barron.

To Fort Des Moines, Iowa, from Camp Pike, Lieut. C. B. HAKE, Milwaukee.

To Fort Ontario, N. Y., from Danville, Capt. W. T. KRADWELL, Wautosa.

To Fort Snelling, Minn., from Camp Hancock, Lieut. J. H. CARROLL, Milwaukee.

To Fort Snelling, Minn., from Camp Hancock, Lieut. J. H. CARROLL, Milwaukee.

To Lake Charles, La., Gerstner Field, from Montgomery, Capt. H. S. STEENBERG, Milwaukee.

To Rockefeller Institute for instruction in the treatment of infected wounds, and on completion *to Walter Reed General Hospital, D. C.*, for instruction, and on completion *to his proper station*, from Colonia, Lieut. H. E. BUNDY, Milwaukee.

To St. Louis, Mo., from Fort Des Moines, Lieut. A. YAFFE, Milwaukee.

ORDERS TO OFFICERS OF THE UNITED STATES PUBLIC HEALTH SERVICE

Asst. Surg.-Gen. T. CLARK (Reserve), proceed to Richmond, Va., to arrange for cooperative work in child hygiene in Virginia.

Sen. Surg. FAIRFAX IRWIN, relieved from duty with the Navy and at Philadelphia, Pa.; proceed to Washington, D. C., for duty in the office of the Chief Medical Advisor of the Bureau of War Risk Insurance.

Surg. E. K. SPRAGUE, directed to make a tour of the New England States when convenient to ascertain the present status of venereal disease control work in the various states.

Surg. C. H. LAVINDER, relieved from duty at the marine hospital, Stapleton, N. Y.; proceed to Washington, D. C., for duty in the marine hospital division.

Passed Asst. Surg. C. P. KNIGHT, relieved at Chattanooga, Tenn., proceed to Camp Sevier, Greenville, S. C., and assume charge.

Passed Asst. Surg. R. H. HETERICK, relieved at the marine hospital, Savannah, Ga.; proceed to Rotterdam, Holland, for duty in the office of the American Consul General.

Passed Asst. Surg. J. A. WATKINS, report to the director of the Hygienic Laboratory for duty in the transfer of hospital and laboratory supplies and other equipment.

Passed Asst. Surg. J. H. LINSON, relieved from duty with the division of venereal diseases. Report for duty in the office of the Chief Medical Advisor of the Bureau of War Risk Insurance.

Asst. Surg. S. L. CHRISTIAN, relieved at Norfolk, Va., proceed to Savannah, Ga., and take charge of the marine hospital.

Asst. Surg. WILLIAM S. BEAN, Jr., proceed to Lakehurst, N. J., to inspect buildings to ascertain their suitability for a hospital of this Service.

Asst. Surg. T. B. H. ANDERSON, report for temporary duty in the office of the Chief Medical Advisor of the Bureau of War Risk Insurance.

Asst. Surg. J. C. TRAVERS (Reserve), relieved at the Baltimore quarantine station; proceed to the marine hospital, Boston, Mass., pending assignment to the Coast Guard Cutter *Tallapoosa*.

Asst. Surg. LEE H. CURRAN (Reserve), proceed to the marine hospital, San Francisco, Calif., pending assignment to Coast Guard Cutter *Unalga*.

Acting Asst. Surg. J. B. ELLIOTT, relieved at Little Rock, Ark., proceed to Camp Sevier, Greenville, S. C., for duty.

Acting Asst. Surg. M. P. McNEIL, relieved at Lonoke, Ark., proceed to Camp Sevier, Greenville, S. C., for duty.

Acting Asst. Surg. M. H. WATTERS, relieved at the Bureau. Proceed to Camp Sevier, Greenville, S. C., for duty.

Acting Asst. Surg. WILLIAM A. WILSON, proceed to Washington, D. C., for conference relative to the work of venereal disease control in New York.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ILLINOIS

Chicago

Personal.—Dr. Martin B. Jelliffe, formerly of Mansfield, Ohio, who was recently discharged from the Medical Corps, U. S. Army, has located in Springfield.——Dr. Edmund J. Doering, Chicago, has been commissioned Lieut.-Col., M. C., U. S. Army.

INDIANA

Venereal Disease Clinic.—Dr. William F. King, Acting Asst. Surg., U. S. P. H. S., Indianapolis, announces the opening of the fifth free venereal disease clinic of the state at East Chicago. The other clinics are at Evansville, Anderson, Muncie and Indianapolis.

Society Organized.—Physicians of Ripley County met in Osgood, recently, and organized the Ripley County Medical Society, and elected Dr. Lafayette T. Cox, Napoleon, president; Dr. John N. Hess, New Marion, vice president, and Dr. Edward D. Freeman, Osgood, secretary-treasurer.

Personal.—Dr. Frank C. Hershey, Carmel, who recently was operated on for gallstones in Indianapolis, is reported to be improving.——A. Parker Hitchens, Philadelphia, formerly director of the H. K. Mulford biologic laboratory, has been appointed associate director of the biologic department of the Lilly Laboratory.

State Board Divisions.—February 24, four new divisions were created in the state board of health with proper appropriations: division of rural hygiene, $25,000; division of venereal diseases, $29,000; division of tuberculosis, $10,000, and for the distribution of 30,000 copies annually of the Indiana Mothers Baby book, $5,000.

IOWA

Personal.—Walter E. Foley, Lieut., M. C., U. S. Army, Davenport, who entered the United States service in June, 1918, and is on duty with the American Expeditionary Forces in France, has been appointed chief of the surgical service of Base Hospital No. 53.

Commencement.—The midwinter commencement exercises of the State University of Iowa College of Medicine, Iowa City, were held, March 27. The chief speaker was Dr. Dean D. Lewis of the University of Chicago, who spoke on "Medical Experiences of the Last Offensive."

MARYLAND

Army Nurses to Be Treated Here.—The Surgeon-General of the United States Army has selected the Sheppard and Enoch Pratt Hospital at Towson as one in which army nurses who have been mentally affected are to be brought for treatment. It is thought that with the facilities offered at the hospital for indoor and outdoor treatment they will rapidly recover their normal condition. About fifteen will be admitted immediately, and the hospital is making preparations to take in as many as possible.

Personal.—Capt. Sydney M. Cone is confined to his home in Baltimore with an attack of pleurisy. He was taken ill while on duty at Fort McHenry, U. S. Army General Hospital No. 2.——Col. Thomas R. Boggs, Baltimore, formerly of the Johns Hopkins Unit, has arrived from overseas on the transport *George Washington*.——Amos F. Hutchins, Capt., M. C., U. S. Army, Baltimore, an associate at the James Buchanan Brady Institute, Johns Hopkins Hospital, who served for a time with the British forces and was later transferred to the Johns Hopkins Base Hospital in France, addressed the South Baltimore Medical Association at a recent meeting on "Experiences in the Front Line Trenches and in No Man's Land."

MASSACHUSETTS

Personal.—Dr. Hugh Cabot, Boston, has been appointed director of clinics in the subdivision of venereal diseases of the state department of health. His efforts will be toward the standardization of work in the sixteen state approved venereal clinics and toward familiarizing the physicians of the state with the opportunities for expert treatment and advice to be found in them.

Cutter Lectures.—The Cutter lectures on "Preventive Medicine and Surgery" were delivered at the Harvard Medical School, March 17, by Harry E. Mock, Lieut.-Col., M. C., U. S. Army, Chicago, Division of Reconstruction of Disabled Soldiers, War Department, on "Industrial Medicine Considered from the Economic Viewpoint," followed by "Reclaiming of Disabled," illustrated by moving pictures; and by Dr. Alice Hamilton, special investigator, U. S. Department of Labor, Chicago, on "Industrial Poisoning in the United States," considered under the following heads: "Lead," April 2; "Other Organic Poisonings," April 3; "Poisons of the Aromatic Series, and of the Fatty Series," April 4.

MICHIGAN

Diphtheria Epidemic.—An epidemic of diphtheria is reported from the village of Pottersville. Schools have been closed, and several families have been placed under quarantine.

Campaign Against Venereal Disease.—The process of internment instituted as a war emergency measure, Nov. 12, 1917, by the state board of health for the care and treatment of cases of venereal disease has been exceedingly successful and a complete card catalogue system has been prepared which contains the fullest information possible, although the rights of the individual are safeguarded. About 8,000 women have been tabulated thus far. The legislature is to be asked to pass more stringent laws to enforce the reporting of such cases, and to appropriate $300,000 to carry on this work for the next two years. There are eight hospitals in the state with 321 beds for the care of venereal patients and 1,300 patients have already been sent to hospitals. They are being given the choice of internment or of being placarded and quarantined, but it is possible for patients afflicted with venereal disease, to receive treatment at public health clinics without publicity.

MINNESOTA

Clinical Association Organized.—The medical staff of the Minneapolis City Hospital has organized a clinical associa-

tion with an initial membership of about fifty. Dr. Archa E. Wilcox is president; Dr. Harry A. Britton, vice president, and Dr. John E. Hynes, secretary-treasurer of the organization.

MISSOURI

Neurologic Clinic.—A scientific session of the Buchanan County Medical Society was held at State Hospital No. 2, St. Joseph, March 19. The superintendent of the hospital, Dr. Porter E. Williams, entertained the society at dinner, and this was followed by a neurologic clinic arranged by the hospital staff.

Personal.—Dr. Hanau W. Loeb, dean of the St. Louis University School of Medicine, is one of the administrators of the estate of the late John T. Miliken, millionaire chemist of St. Louis, and has found the duties imposed on him so numerous that the school has appointed Dr. Don R. Joseph, professor of physiology, as assistant dean.——Dr. G. Canby Robinson, St. Louis, associate professor of medicine and acting dean of Washington University Medical School, has been elected dean of the school.——Buchanan County Medical Society has indorsed the administration of Dr. Porter E. Williams, superintendent of State Hospital No. 2 at St. Joseph, and congratulated Governor Gardner on the appointment of Dr. Williams. The society also indorsed the work of Dr. Hasbrouck DeLamater, city health officer, and Dr. Daniel Morton, St. Joseph, member of the social welfare board, and petitioned the mayor of St. Joseph to reappoint them.

Clinic Organization.—The St. Louis Medical Society has appointed a committee to organize the clinics in St. Louis with the view of correlating the clinical material of the city for the purpose of establishing a method of announcing the work to be done in each clinic from day to day in order that the local profession and visiting physicians may have better opportunity to observe the work done by St. Louis physicians. It is proposed to form an organization that will furnish a central bureau of information concerning the schedule of cases so that a physician who desires to see work in some particular branch of medicine can be directed to a clinic without delay. The following members have been appointed chairmen of committees in each of the branches mentioned: Charles H. Neilson, medicine; John R. Caulk, genito-urinary; Jules M. Brady, pediatrics; Harvey S. McKay, surgery; William W. Graves, neurology; William E. Sauer, nose and throat; Frederick J. Taussig, gynecology and obstetrics; Edward H. Higbee, Jr., eye, and J. Archer O'Reilly, orthopedics.

Progress of Medical Legislation.—House Bill 859, introduced by Dr. Asier J. Speer of Bollinger County, amends the medical practice act by striking out the word "reputable" and substituting therefor the words "legally chartered." By this substitution the state board of health would be compelled to examine the applicants of any medical college that held a legal charter, irrespective of the character, quality and quantity of equipment the college possessed or of the reputability of its staff and methods of graduating of students. The bill further amends the present act by omitting certain words in the premedical educational qualifications which would further lower the standards of medical education in Missouri. House Bill 360 (the chiropractic bill) is in the committee on criminal jurisprudence; it has been reported that the committee contemplates amending the bill so as to require applicants in chiropractic to obtain a license from either the state board of osteopathy or the state board of health; in the senate (S. B. 232) this bill has been reported unfavorably. House Bill 905 (limiting fees physicians may charge to $1.50 a call, $1 in the office and $10 for any obstetric case) is in the committee on public health; in the senate no companion bill has been introduced. House Bill 909 (writing prescriptions in English) is in the committee on public health; in the senate (S. B. 662) this measure has been reported unfavorably. Senate Bill 663 (placing on surgeons the burden of proof that due care has been exercised in operations when the surgeon is sued for malpractice) is in the committee on eleemosynary institutions. House Bill 122 (workmen's compensation) has been passed with the inclusion of the free choice of physician by the injured employee and exclusive state insurance; in the senate the bill is still in committee.

NEW YORK

Albany Public Health Course.—Forty-one health officers and physicians have registered for the postgraduate course in infectious diseases and public health, which is being given by the Albany Medical College and the state department of health.

Drug Bill Defeated.—The bill sponsored by Governor Smith which provided that the recently created state commission of narcotic drug control be abolished and its functions transferred to the state department of health was defeated in the assembly, March 27, by a motion which refused to release it from committee. A similar action was taken by the senate a week before.

Committee to Investigate Alcoholic Content of Medicines.—The state excise committee, in reporting the bill which gives to the state excise commission authority to enforce the prohibition amendment to the United States constitution, has amended the bill to provide for a committee of three physicians and two druggists to pass on the 250 medicines now in the market for the purpose of determining whether they are beneficial, harmless or intoxicating.

Personal.—Dr. Hermann M. Biggs, state commissioner of health, has been granted six weeks' leave of absence and is now en route to France, where he will aid in the establishment of an international Red Cross society.——Dr. Francis J. Cahill, health officer of Hoosick Falls, has been commended in a letter to the Surgeon-General of the Army by Brig.-Gen. Edward B. Billingham, for services rendered to sick soldiers while in the German prison camp at Graudenz, West Prussia.

County Tuberculosis Survey.—As a result of the tuberculosis survey recently held in Clinton County, the board of supervisors has appropriated $1,200 and the necessary traveling expenses for a county tuberculosis nurse, for one year.——Immediately following the survey, four persons made application for care at Ray Brook or at a county tuberculosis hospital.——As a result of a county tuberculosis survey, a neglected case of empyema was found and sent to a hospital, where immediate operation undoubtedly saved the child's life.

New York City

Dinner to Colonel Lambert.—A complimentary dinner to be tended to Col. Alexander Lambert, American Red Cross, at the Hotel Commodore, April 12, at 7 o'clock, in recognition of his work for the medical profession in the state and nation and overseas.

Harvey Society Lecture.—The seventh lecture of the Harvey Society series will be given at the New York Academy of Medicine, April 12, by Dr. Stewart Paton, Princeton, N. J., formerly Major, M. C., U. S. Army, on "Human Behavior in War and Peace."

Personal.—Dr. Simon Baruch is seriously ill with heart disease at his home.——David Edward Hoag, Capt., M. C., U. S. Army, has received his discharge from the service and has been appointed attending neurologist at the New York City Hospital, and also visiting neurologist at the West Side Hospital and chief of the clinic on nervous and mental diseases at the West Side Dispensary and Hospital.

Hospitals Ask Voice in Legislation.—The Hospital Conference of the City of New York, representing forty institutions in this city which maintain nurses' training schools, have appealed to the commissioner of education for a hearing on the proposed legislation affecting hospitals. This action was taken because several bills have been introduced into the legislature during the past few years which, if passed, would revolutionize the training of nurses in hospitals. At present there is an amendment to the nursing bill at Albany which provided for the training of short term nurses or attendants. The hospitals fear that there is a demand for this class of attendants; but since the hospitals will be given the training of these students, they feel that they should be consulted in the matter.

OHIO

Personal.—John D. O'Brien, Major, M. C., U. S. Army, Canton, on duty with the American Expeditionary Forces, was promoted to lieutenant-colonel, M. C., February 15.——Dr. William S. Fox has been appointed a medical inspector in Cleveland public schools.

Educational Committee Appointed.—At a meeting of the council of the Ohio State Medical Association, held in Columbus, March 10, Drs. Charles Edwin Briggs, Cleveland; William D. Porter, Cincinnati, and Harry E. Hunt, Newark, were appointed an educational committee to continue the campaign against venereal diseases. Lectures and clinics for physicians are to be held throughout the state, at which the latest and most improved methods of combating venereal disease will be explained and discussed.

Hughes Bill Passes House.—The Hughes bill, which establishes each city of over 25,000 population as a separate health district, and each county area outside of such city as a

separate district, has passed the lower house by a vote of 81 to 14, and is now before the senate for consideration. Under this bill the maximum number of districts possible will be 102, as compared with 2,150 at present. The bill authorizes combinations of districts to reduce the overhead expense. Each district is to have a full-time health officer and at least one public health nurse, with such additional health employees as are necessary to provide an adequate health administration.

OREGON

Sanitary Engineer to Be Employed.—At the instance of Representative Childs, the Ways and Means Committee has rescinded its action reducing the appropriation for the state board of health, and has added $10,000 to the appropriation for the employment of a sanitary engineer.

State Mental Hygiene Committee.—The following named physicians have been appointed a state mental hygiene committee, which will support the bill now pending in the legislature providing for the survey of state institutions for the insane and feebleminded: Dr. Jonah B. Wise, temporary chairman; Dr. Samuel Kohs of Reed College, secretary; Drs. E. S. Conklin and E. B. DeBusk of the University of Oregon; Bishop Walter T. Sumner; Drs. J. Allen Gilbert and William House, both of Portland; Hon. Robert Tucker and Miss Manley of the Allen School for Defective Children; Dr. Robert E. L. Steiner, superintendent of the State Hospital for the Insane, Salem; Drs. Walter H. Williamson and Wilson D. McNary, Pendleton, and J. M. Smith.

PENNSYLVANIA

Instruction Planned.—Plans for assembling the county and other medical inspectors of the state department of health in camps during the coming summer for instructions in their duties and to learn the latest methods of combating epidemics have been worked out by State Health Commissioner Edward Martin. Special courses in sanitation will be given and lectures will be delivered by eminent specialists.

Philadelphia

Personal.—Dr. James R. Bean, Ashbourne, a suburb of Philadelphia, has been chosen health commissioner of Oshkosh, Wis., and has also been appointed director of the state cooperative laboratory there.——Dr. C. Howard Moore, who enlisted in April, 1917, went to France as a lieutenant with the Rainbow Division and was commissioned a captain in 1918, was promoted to major, March 1, and assigned to take charge of Evacuation Hospital No. 27, Army of Occupation, at Coblenz, Germany. This hospital is limited to fracture cases.

TEXAS

Health Legislation Outlined.—The special committee appointed by the governor to investigate health conditions in the state has reported its findings together with a number of recommendations. Chief among these are that the members of the state board of health be appointed, as are the regents of the university, for a term of six years, one third being appointed every two years; that there be established, in the department of health, bureaus of communicable diseases, sanitary engineers, rural sanitation, child hygiene, public health nursing and laboratories and health instruction in charge of a director; that the state be divided into eight or more sanitary health districts each in charge of a full-time district health officer; that bureau directors and health directors be appointed by the state health officer with the approval of the state board of health, and that adequate appropriations be provided with which to carry on the work of the department. The commission also reported that in west Texas there are more than 30,000 persons constantly suffering from tuberculosis and that there are more than 12,000 cases each year of typhoid fever, both of these conditions being preventable. Hookworm disease and malaria also prevail, and the state has the unenviable reputation that more than one out of every five babies born in the state die before reaching 1 year. The commission that made this report was appointed Nov. 27, 1918, and has held fifteen sessions in Austin and Dallas.

VERMONT

Personal.—Dr. Henry A. Ladd has resigned as inspector of the Vermont State Board of Health to become superintendent of the Mary Fletcher Hospital, Burlington.——Dr. Henri L. Pache, Danville, has been appointed inspector for the Vermont State Board of Health.——Dr. F. Thomas Kidder, Woodstock, has been elected president of the state board of health.——Dr. William T. Slayton, Morrisville, has been appointed a member of the state board of health, succeeding Dr. Charles S. Caverly, Rutland, deceased.

WISCONSIN

Appropriation for Influenza Fight.—The common council of Milwaukee, March 21, voted full power to Health Commissioner Ruhland to proceed against the spread of influenza, and provided him with a fund of $10,000 to be used in the educational campaign against the disease.

New Officers.—At the annual meeting of the Wisconsin Antituberculosis Association, held in Milwaukee, March 21, Dr. John W. Coon, Stevens Point, was elected president; Dr. John R. Currens, Two Rivers, vice president; Dr. J. Gurney Taylor, Milwaukee, recording secretary, and Dr. Gustave Windesheim, Kenosha, a member of the executive committee.

Personal.—Dr. Valentine A. Gudex, Milwaukee, has been appointed deputy state health officer for the fourth sanitary district, succeeding Dr. Ira F. Thompson, Eau Claire, acting assistant surgeon, U. S. P. H. S., now in charge of venereal diseases.——Dr. L. Rock Sleyster, Waupun, has been appointed physician in charge of the Milwaukee Sanitarium, Wauwatosa, succeeding Dr. Richard Dewey. Dr. Dewey will continue to reside in Wauwatosa, and will be in regular attendance at the sanatorium acting as medical director.——William Theodore K. Cradwell, Capt., M. C., U. S. Army, and formerly an associate at Milwaukee Sanitarium, will soon resume his position as assistant superintendent.——Dr. Francis A. Malone, Waterford, charged with manslaughter, has been acquitted. A car driven by Dr. Malone, who was making an emergency call, collided with another car, the driver of which suffered a fracture of the skull from which he died a short time later.——Otho A. Fiedler, Major, M. C., U. S. Army, Sheboygan, and on duty with the American Expeditionary Forces, has been transferred to Base Hospital No. 121, and promoted to lieutenant-colonel.——Dr. Arthur H. Broche, city physician of Oshkosh for eighteen years, and for six years health commissioner, has resigned.——Dr. James P. Lenfestey, DePere, has been reelected president of the DePere Health Association.——Dr. George E. Horne, Black River Falls, who has been ill for several months with rheumatism, is now convalescent.——Dr. Glenford L. Bellis, Major, M. C., U. S. Army, Wauwatosa, who had been assigned to tuberculosis work in France, has been reassigned for service in Italy.

CANADA

Personal.—Lieut.-Col. Jabez H. Elliott, M.D., Toronto, has gone to Mexico for a month's holiday.——Major John F. Burgess, M.D., Owen Sound, Ont., has been gazetted an officer of the British Empire.——Capts. Robert D. MacKenzie and A. R. Hagerman have been gazetted for the Military Cross.——Major Frank H. Pratten, Toronto, who was formerly for several years in charge of the Muskoka Free Hospital for Consumptives, is on his way home from overseas where he has been since October, 1915.

Epidemics in North Labrador.—News of the shocking conditions in North Labrador has reached St. John's, N. F., as a result of influenza, smallpox and measles which swept that coast the past winter. Earlier news showed that the deaths numbered 25 per cent. of the population. In some sections, influenza raged for four months and is said to have carried off 50 per cent. of the inhabitants. Okak, with a population of more than 200, is entirely wiped out. At Hebron over 200 died and left only a remnant to bury them. Many outposts which are invariably connected with the central mail posts have failed to report, and the conclusion is that all have perished by these diseases. Medical aid was unobtainable, and the full extent of ravages of the diseases will not be known until the opening of navigation.

Uniform Vital Statistics for Canada.—A bill has been introduced into the Ontario legislature which is the result of a plan decided on at the recent conference of public health officials at Ottawa. By it there will be provided a system of uniform registration for the dominion in the registration of births, marriages and deaths. Divisional registrars must hereafter report monthly instead of quarterly; and physicians, nurses, clergymen, undertakers and others with a knowledge of the facts will be compelled to supply information demanded by the registrar-general. There is a clause in the bill which provides that when there are births at sea, when the mother is on her way to Canada, or when births occur across the border, in hospitals, they are to be registered in the province, provided the mother is a citizen of Canada.

LATIN AMERICA

Deaths in the Profession.—Dr. **A. R. Blanco,** a prominent physician of Cartagena, Colombia, senator and leader in medical and public health matters, professor of medicine and natural sciences in the medical school of the University of Cartagena, of which he was also rector. Dr. Blanco served at times as the representative of Colombia in diplomatic negotiations in the United States and at Panama. The flags were at half mast throughout the entire department by official order the day of his funeral.——Dr. **G. Olano** of Lima, Peru, a local authority and writer on public health and medicolegal questions, aged 47.

Spanish Sanatorium in New York.—La Unión Benéfica Española of New York City is appealing for funds for the organization of a sanatorium in the neighborhood of New York City, where Spanish speaking patients will find hospital and sanatorium treatment and hear their own language spoken. It is stated that already more than $13,000 has been subscribed for the purpose. All donations should be sent to the Unión Benéfica Española (Fondo Sanatorio) 8 State Street, New York City. The union now has 2,848 members, and during the recent influenza epidemic spent over $6,000 for medical and hospital assistance of the members.

GENERAL

Health Board Meeting.—The Conference of State and Provincial Boards of Health will be held at Atlantic City, June 6 and 7, following the Conference of the Surgeon-General of the United States Public Health Service with the state and territorial health officials at Washington, June 4 and 5.

American Life Convention.—The ninth annual meeting of the Medical Section of the American Life Convention was held at the Signal Mountain Hotel, Chattanooga, Tenn., March 26 to 28. The chief topics for discussion were: "Influenza," "The Practical Significance of Important Changes in the Adult Death Rate," and "Health Conservation and Its Importance to Life Insurance." The following officers were elected: chairman, Dr. Frank L. Truitt, Indianapolis; vice chairman, Dr. George E. Crawford, Cedar Rapids, Iowa, and secretary, Dr. Frank L. B. Jenney, Chicago (reelected).

Committee to International Conference.—The American committee to the International Red Cross Conference at Geneva to be held thirty days after the signing of the peace treaty sailed for the preliminary meetings, March 15. The committee consisted of Dr. Fritz B. Talbot, Boston; L. Emmett Holt, New York, and Samuel McC. Hamill, Philadelphia, pediatricians; Col Frederick F. Russell of the Army Medical Corps; Dr. William H. Welch, Baltimore; Hermann M. Biggs, commissioner of health of the state of New York, and Dr. Edward R. Baldwin of Saranac Lake, N. Y., director of the Trudeau Foundation.

Meeting of Association of American Medical Colleges.—At the twenty-ninth annual meeting, held in Chicago, March 4, the following officers were elected for the ensuing year: president, Dr. George Blumer, New Haven, Conn.; vice president, Dr. A. C. Eycleshymer, Chicago; secretary-treasurer, Dr. Fred. C. Zapffe, 3431 Lexington Street, Chicago; chairman of executive council, Dr. Irving S. Cutter, Omaha. An entirely new constitution and by-laws was adopted, the principal differences from the old set of rules being in the requirements, high school and college premedical, for admission to medical schools. The requirement in physics was reduced to six semester hours, and in biology it was decided that six semester hours of college work were acceptable for students who had completed a year of biology in high school. The other modifications were mainly in phraseology.

Scientific Research Appropriations.—The United States Interdepartmental Social Hygiene Board announces the following appropriations from the Scientific Research Fund of the board:

Leland Stanford Junior University Medical School: (1) Investigation into more effective treatment in acute and chronic gonorrhea, under the direction of Dr. R. L. Rigdon, clinical professor of genito-urinary surgery, and Dr. Alfred B. Spalding, professor of obstetrics and gynecology, San Francisco, $2,300. (2) The permeability of the meninges to antisyphilitic drugs—an attempt to increase their permeability, under the direction of Dr. Henry G. Mehrtens, clinical professor of neurology, San Francisco, $2,300. (3) Investigation into more effective methods of treating syphilis, under the direction of Dr. Harry E. Alderson, clinical professor of dermatology, $2,600; total, $7,200.

University of Michigan, College of Medicine and Surgery: (1) A research for an improved method of demonstrating *Spirochaeta pallida* in human tissues, under the direction of Dr. Alfred S. Warthin, professor of pathology, Ann Arbor, $6,000.

Protection Against German Reinvasion of Our Chemical Industries.—The alien property custodian has conceived an idea that if German chemical patents should be placed in the hands of any American institution strong enough to protect them, a real obstacle might be opposed to German importations after the war, and the American industry might be freed from the prohibition enforced by the patents against manufacture. The organization of a corporation to be known as the Chemical Foundation, Inc., is recommended in which practically every American manufacturer will be a stockholder, but in which the number of voting shares held by any one interest will be so restricted that improper control will be impossible. It will hold the 4,500 German chemical patents, which have already been transferred to it for a consideration of $250,000. Nonexclusive licenses only will be granted to all proper American applicants at a small fee, and to the United States without fee. All surplus income is to be used for the retirement of the preferred stock and thereafter for research work looking toward the advancement of chemical and allied science and industry. The foundation has a capitalization of half a million dollars of which $100,000 is for common stock and the balance for preferred stock. After paying for the patents transferred to it, it will still have $250,000 working capital and will accordingly be in a position to prosecute vigorously any infringement proceedings which may become necessary when German manufacturers attempt to regain their American trade.

Red Cross War Council Ceases to Exist.—Mr. Henry P. Davison, chairman of the American Red Cross War Council, which was appointed by President Wilson, May 10, 1917, to carry on the work of the American Red Cross during the war, issued a statement, March 19, regarding the facts that led to the cessation of the work of the council, March 1. The war council, immediately after the signing of the armistice, instituted studies to determine when the strictly war work of the American Red Cross would be sufficiently matured to enable the directions of affairs to be assumed by the permanent staff headed by Dr. Livingston Farrand, Boulder, Colo., and this transition was made, March 1. During the past twenty-one months, donations of cash and supplies have been given to the Red Cross exceeding $400,000,000 in value, and in addition contributions of service have been given without stint and often with great sacrifice by millions of patriotic men and women. When the war opened the American Red Cross had a membership of about 500,000; at present there are more than 17,000,000 full paid members and about 9,000,000 members of the Junior Red Cross. The organization had about 9,000 person on its rolls in France, and of these the services of 6,000 are still being required. Their active operations are still in progress in Archangel and in Siberia. A commission has been dispatched to carry supplies and to work in the Balkan countries, a second commission has just reached Poland equipped with physicians and nurses, medical supplies and food for children and invalids; a third commission has been appointed to aid the relief of the suffering of Russian prisoners in German prison camps, and a fourth commission is working in Palestine.

Fellowships for Physics and Chemistry.—The National Research Council has been entrusted by the Rockefeller Foundation with the expenditure of an appropriation of half a million dollars within the period of five years, to promote fundamental research in physics and chemistry in educational institutions in the United States. The primary feature of this project is the initiation and maintenance of a system of national research fellowships, which are to be awarded by the council to persons who have demonstrated ability in research to enable them to take investigations at educational institutions to make adequate provision for the effective prosecution of research in physics and chemistry. Among the important results expected to follow from the execution of the plan are: opening of a scientific career to a larger number of able investigators and their more thorough training in research; increase of knowledge regarding the fundamental principles of physics and chemistry, and creation of more favorable conditions for research in the educational institutions of this country. The project will be administered by the research fellowship board of the council, which is composed of Henry A. Bumstead, professor of physics in Yale University; Simon Flexner, director of the laboratories of the Rockefeller Institute for Medical Research, New York; George E. Hale, director of Mount Wilson Observatory; Elmer P. Kohler, professor of chemistry, Harvard Univer-

sity; Robert A. Millikan, professor of physics, University of Chicago; Arthur A. Noyes, director of the Research Laboratory of Physical Chemistry, Massachusetts Institute of Technology, and Wilder D. Bancroft, professor of physical chemistry, Cornell University. The research fellowships will be awarded to persons who have had training at an American university or scientific school equivalent to that represented by the doctor's degree. The salary will be ordinarily $1,500 for the first year. The appointment will be for one year, with eligibility for successive reappointments usually with an increase in salary. It is expected that fifteen or twenty fellowships will be available this year. Applications should be sent to the secretary of the Research Fellowship Board, National Research Council, 1023 Sixteenth Street, Washington, D. C. Applications will be received up to Sept. 1, 1919, for fellowships available during the coming academic year, but a limited number of appointments will be made on the basis of applications made before April 20, this year.

FOREIGN

War Mortality Among German Physicians.—The *Hospitalstidende* quotes a Berlin medical journal of last November to the effect that the latest casualty lists bring to 663 the number of physicians killed in the war; 422 died from illness; 212 were taken prisoner and 72 are missing.

Ruggi and Durante Reach the Age Limit.—The two widely known surgeons, Dr. G. O. Ruggi of Bologna and Dr. F. O. Durante of Rome, reach the age limit this spring and retire from the chairs of clinical surgery and operative medicine in their respective universities. Durante, with Baccelli, founded the *Policlinico* twenty-six years ago.

Proposed Cancer Hospital in Norway.—The *Ugeskrift for Læger* relates that the Norwegian Cancer Fund Committee has collected 600,000 kronen (approximately $150,000) toward a national hospital for care of and research on cancer. Some funds from another source are soon to be available, and the second week of February a general appeal by cards is to be made throughout the country, and in Christiania a lecture on cancer is to be held, and some concerts. The aim is to provide an institution where the inoperable cases can get radiotherapy, etc.

Old Nomenclature Preferred.—The Anatomical Society of Great Britain and Ireland, at its meeting in London, March 1, received and unanimously adopted the report of its committee on nomenclature, "That it sees no reason for departing from the use of the old nomenclature as the recognized medium of description for employment in anatomical textbooks and departments, or by medical men in general; on the other hand, it thinks that there are very good reasons to be urged against the adoption of any other nomenclature for this purpose."

Red Cross Work in Siberia.—The American Red Cross has opened a well-appointed hospital four versts (2½ miles) from the city of Omsk, Siberia, with 400 beds and capable of extension to 1,000. This hospital is one of the series of medical institutions which have been organized in Siberia, chiefly through the efforts of Dr. R. B. Teusler of Tokyo, chairman of the Red Cross Commission to Serbia.——The American Red Cross has opened a hospital at Tumen with accommodations for 500 patients; also dental clinics at Cheliabinsk and at Ekaterinburg. A hospital has also been opened at Petropavlovsk for typhus fever with a capacity of 400 beds.

Deaths in the Profession Abroad.—Dr. **H. Chaput,** head of a surgical clinic at the hôpital Lariboisière, Paris, aged about 56.——Dr. **F. de Cortejarena,** of Madrid, aged 83. He was one of the founders of the Sociedad Ginecologica in 1874, and was professor of obstetrics and pathology at the University of Madrid for many years, chief at one time of the Public Health Service, delegate to many international medical congresses, and representative in the senate of the Academia de Medicina and the province of Madrid, and was long on the editorial staff of the *Siglo Medico.* On the occasion of his fiftieth professional anniversary, he published his memoirs under the title "Tiempo Pasado."——Dr. **G. Sterzi,** professor of comparative anatomy at the University of Cagliari. His published works dealt mainly with the comparative anatomy of the nervous system.——Dr. **O. V. Lassen,** a prominent surgeon of Denmark, aged 74.——Dr. **S. H. A. Rambusch** of Copenhagen, aged 57.——Dr. **G. Pandolfi,** associate professor of nervous and mental diseases at the University of Naples, editor of the *Annali di Neurologia.* His death while in military service has recently been confirmed.

MEXICO LETTER

Mexico City, March 24, 1919.

An Alcoholic Inundation

On account of the approaching nation wide prohibition of alcohol manufacture in the United States, some of the brewers and distillers of the United States have been studying whether they could move their plants to Mexico, establishing breweries and distilleries in Mexico City and elsewhere. We are by no means behind other nations in the matter of alcoholism, and if we could count on having an abundant, well distilled and comparatively inexpensive drink, like beer, it might induce those who drink pulque (the fermented juice of the agave cactus) to take in its place a less harmful beverage. Pulque, in addition to its noxious action from the large content of alcohol, is harmful further from the putrefied substances which it contains and the large number of living microbes in it. For a long time, distinguished clinicians have been attributing to the abuse of pulque the prevalence of affections of the digestive apparatus in the central tableland of Mexico, as also the frequency of dysentery and of abscess in the liver. As we know now the important rôle played by *Endameba histolytica* in these last mentioned processes, it is not at all venturesome to assume that the white liquor supplies a predisposing factor at least, and may in certain cases be the vehicle for the amebas. The contamination may occur in the fluid itself, or from contact with the hands and lips of the workmen or in the *cueros* in which it is usually kept.

"Education Will Make a New Mexico"

John Emerson Smith, director of the San Antonio *Express* and the weekly *Evening News,* has been visiting the various departments of the university here. He has collected data for an article to be published in his journals under the above heading, analyzing the workings of the administrative functions and the intellectual progress of our seats of learning. His object is mainly to make known in the United States the progress of Mexico in all that refers to university instruction and the public schools.

The Academy of Medicine

The Academia de Medicina announces that there are some vacant places in the sections of medical natural history, bacteriology, internal medicine, hygiene and pathologic anatomy, and invites those who would like to compete for the vacant posts to present the necessary credentials. Dr. T. G. Perrin, a Spanish physician resident here for some years, applied for the post in the section on pathologic anatomy, presenting therewith a monograph on the cytodiagnosis of syphilis, based on 200 cases. His article made a favorable impression, and this with his scientific antecedents, insured his acceptance. Dr. J. Arroyo, collaborator in Dr. Perrin's laboratory and professor of histology in the medical school here, is soon to present a report on the Lange colloidal gold reaction in the diagnosis of syphilis of the nervous system.

The Medical School

The courses in English and French are only now under way in the Facultad de Medicina although these courses were inaugurated last year. The course in French is in charge of Madame Facio, from Paris, and the English course is to be taught by Sr. T. Montaño, a graduate of a London college. Dr. F. Ocaranza has begun a course on biology (*curso libre*), and a course in German has been established, with biweekly classes. The gymnasium for the students will soon be conveniently installed according to the notice sent out by Dr. R. Amor, director of the Facultad, so that the students can cultivate their physical strength along with their mental faculties and thus will obtain a harmonious all-around development.

Welfare Work

A number of charitable persons are contributing cash or clothing for children to aid in the work of the Sociedad Protectora del Niño, which aims to aid homeless and friendless children. There is a wide field for such work here.

A group of Mexicans living at Los Angeles, Calif., have formed an association to collect a fund to aid needy persons there with clothing and medicines. Two physicians, Drs. J. M. Samaniego and F. Zarraga, are on the board of the society, which is under the patronage of the mayor of Los Angeles.

Personal

Dr. P. Sosa has been appointed professor of hygiene in the naval school, the Escuela Naval, recently reinaugurated at Vera Cruz.

Dr. J. A. Pérez, director of the Hospital Morelos has returned from New York where he went on official business, to purchase medicines and surgical instruments, the cost totaling about $85,000.

PARIS LETTER

PARIS, March 2, 1919.

Infectious Diseases and Prophylaxis in the Army

At the second meeting of the Société de biologie, devoted to the biology of the war, Dr. Louis Martin discussed the subject of diphtheria carriers. He described the technic employed in searching for carriers and the examination of diphtheria bacillus colonies. As to the contagiousness of the disease, he found that the patients are the most important carriers. They harbor the most virulent bacilli, the mucous membrane of the throat furnishing the greatest number of colonies in serum swab cultures. Successive cultures contain progressively fewer colonies in proportion to the interval since the beginning of the disease. As a rule, in two thirds of the cases at least, the bacilli disappear completely one month after the onset of the disease. They may, however, be found for a long time afterward, for three and even six months, but such instances are very rare. The impending disappearance of the bacilli is shown by the lessening of the number of colonies; diminution in virulence, and association of other bacteria with the diphtheria bacillus. As the colonies of the latter become fewer in number, an increasing number of staphylococci is seen.

Carriers should be sought for in the neighborhood of the patient. They are classified as "recent," that is, persons who have contracted diphtheria from another patient. The "old" carriers are met with among persons in environments long contaminated with diphtheria. These "old" carriers have apparently normal throats, so far as appearances go; the mucous membranes are healthy, and they do not contract the disease. They can, however, spread it. They are known as "healthy" carriers. As a rule, the diphtheria bacilli do not disappear suddenly and definitely from the throat of carriers; a culture taken today may not show any bacilli, whereas a culture made several days later may show large numbers of bacilli. Therefore, it is held that such persons will be declared not to be carriers only after two negative cultures, made at six days' interval. A simple angina may be the occasion for the return of the bacilli in culture, even in large numbers; often they then disappear rapidly and definitely.

As to prophylaxis: Isolation of the patient is of prime importance, because he is the most formidable carrier; he is the principal cause of all epidemics. Whenever a case of diphtheria makes its appearance in a unit, the doctor should at once make an investigation of persons in the environment of the patient, isolate all persons who have buccopharyngeal lesions, and, if necessary, inject them with antitoxin. Disinfection is very essential after a case of diphtheria, more so when many cases have existed, for removing the carrier would not prevent the spread of the disease. Prophylactic injections of antitoxin should be given, especially when the epidemic is very grave and when the disease develops very rapidly.

Dr. Charles Dopter, physician in chief of the army, and professor of epidemiology in the Ecole d'application de médecine et de pharmacie militaires du Val-de-Grâce, reported on meningococcus carriers in the zone des armées during the war. At the beginning of the war the medical officers anticipated during the first winter and spring a considerable number of cases of cerebrospinal meningitis, as its development would be facilitated by the bringing together of large military organizations. But nothing of the kind occurred, strange to say; and now, after four years of war, it may be said, on the basis of the published figures, that meningococcic infection was one of those which seemed the most negligible in the zone of the armies. These figures are as follows: In 1915, there were 1,075 cases of cerebrospinal meningitis; 452 cases in 1916, and 406 cases in 1917.

From these statistics it appears that the total number of cases observed in the active forces is quite inconsiderable. In fact, it is worth noting that compared with the incidence of meningitis among the troops quartered in the interior the foregoing record is only one fourth as high. Cerebrospinal meningitis appeared in the army only in a sporadic manner, striking here and there a very few of the military men out of very large units, so that it has been impossible to connect up the various outbreaks so few and far apart have they been. However, several outbreaks did take on an epidemic character. In several instruction camps in which men were crowded together in the restricted area of cantonments, where there was not room to give them sufficient freedom of movement, Dopter had an opportunity of observing several foci which sprang up suddenly, six or eight cases appearing inside of forty-eight hours, extending even to the neighboring units so that there was an evident relation to the groups first attacked. What is true of cerebrospinal meningitis as a disease is equally true of the carriers. Just as the disease itself does not spread but remains localized, so the meningococcal infection in the carriers is only revealed by a rhinopharyngitis which remains localized in one spot where the pathogenic germ fortifies itself without reaching out and attacking other organs.

Prophylaxis should consist in isolating meningococcus carriers, whether ill or not, so as to protect the unit involved against possible contagion from them. This specific complete prophylaxis may be accomplished as follows: When the first case of meningitis is seen (1) isolate everyone around who can be suspected until the exact nature of the causative organism has been determined; (2) if it is the meningococcus, take cultures with a view to isolating the carriers and making such bacteriologic examinations as will detect these carriers; (3) isolate known carriers until the germs have disappeared from the rhinopharynx; treat them by means of local antiseptic applications to the nasal fossae. This program seemed hardly possible to carry out thoroughly in war times; nevertheless, it was done at all points. This prophylaxis of meningococcus rhinopharyngitis was rendered easier of course by the slight extension of the epidemic meningococcus element. It is possible that the extension of the disease may have been prevented in part by the measures applied, especially by the activity of the army laboratories.

Prophylaxis Against Rabies

The Académie de médecine recently discussed measures for combating the increase in the number of hydrophobia cases which has been noted in all parts of France since the beginning of the war. The discussion was participated in by Drs. Kirmisson, Railliet and Bard, and a resolution was adopted urging that (1) the attention of legislators and the authorities be called to this health problem of manifest and progressive gravity; (2) that all cities as well as country districts use all possible means to impound all dogs which are roaming around at large; (3) an earnest appeal be made to the public in general to cooperate to the fullest extent to help to eradicate rabies. Placing a license tag on the dog has yielded good results in other countries as well as in certain French cities, therefore it should be made obligatory, as establishing the responsibility of the owner of the dog.

Aeroplane Transportation of Wounded in Sahara

Dr. T. Tuffier recently detailed to the Académie de médecine the services rendered by the aeroplane in the transportation of the severely wounded and of medical officers called to care for them in south Oran, Morocco, and in south Tunis. The organization in charge of this work established an aerial route extending 597 kilometers into the desert. Landing stations and food depots were established along this route. Dr. Tuffier stated that to facilitate the handling of the wounded, these aeroplanes should open at the side, and they should be supplied with Bréguet's apparatus so as to make them as rapid as possible and give them greater stability in making a landing. Besides the aeroplane ambulances, which should be reserved for the cases of severe wounds of the thorax and abdomen and of the legs, reconnoitering and bombing aeroplanes can be used to carry the less severely wounded. In the Sahara the only really serious obstacles which the aeroplanes had to overcome were caused by the temperature, which determines the dangerous air currents and eddies in the strata of superposed and overheated air, and the sirocco, because of the sand clouds which this wind raises.

Influenza Epidemic

The epidemic of influenza which had declined has broken out anew in a most disquieting manner. In view of the increase in the number of the sick, the Assistance Publique has taken measures to meet the increase in the number of hospital admissions (an average of 240 per day): 200 beds have been set aside at the Salpêtrière, 200 at the hôpital des Petits-Ménages, and 180 at the hôpital Cochin. The epidemic has assumed grave proportions not only in Paris but in several of the départements.

Plans of the Paris Medical School

The Paris medical faculty held a reunion February 22 for the demobilized students who have been released from the army so that they can take up their medical studies. These students are members of the classes preceding the 1914 class; they have seen fifty-four months of military service, some of them having been in the service before the declaration of war. The Faculty has established special didactic and practical courses for these students, providing for intensive teaching which will shorten the annual course to six months without interfering with the general courses of instruction.

Medical Officers Victims of Professional Duty

The medical group in the parliament has passed resolutions calling on the ministers of war and marine to consider medical officers who died while on service in military or naval hospitals as having fallen on the field of battle. The battle-field of these men was the hospital in which they served, therefore all honors of having fallen while fighting should be accorded them, as is done in the case of combatants in the line.

LIMA LETTER

Lima, Peru, Feb. 28, 1919.

The Pandemic of Influenza

First Lima and then the rest of Peru had and are still suffering from the ravages of the pandemic of influenza. Statistics show that in the capital of the republic the mortality from this cause trebled the total mortality during the months of November and December. More than 600 deaths can be attributed to influenza, and the total mortality for the year was thus raised from 5,000 to 6,500. The symptomatology, epidemiology and the course of the epidemic do not differ from those reported elsewhere throughout the world. At the same time it may be noted that the second outbreak of the epidemic, with its grave and bronchopulmonary forms, did not spread at Lima to the same extent as at other points. Perhaps during the first cycle, which was of a benign and catarrhal form, almost the entire population had been attacked and immunized.

The Academy of Medicine

The Academia Nacional de Medicina has recently elected to regular membership Dr. O. Hercelles, professor of pathologic anatomy and chief of the Laboratorio de Investigaciones Clinicas of the Hospital 2 de Mayo, and also Dr. A. Corvetto, in charge of the Dispensario antituberculoso Byron. The Academia has also elected to membership three physicians recently banished from Chile where they had been practicing at Iquique. The reason for the banishment is that they are natives of Peru. Dr. M. Alcedán was elected to regular membership, and Drs. Neuhaus and Parodi to associate memberships. This act is as a protest against the arbitrary procedure of the Chilean government.

The Spanish Edition of The Journal

The appearance of the Spanish edition of The Journal has been welcomed at Lima with marked favor. It is regarded as a decisive advance on the road of friendship and close scientific relationship between North and South America.

Relapsing Fever at Lima

Dr. Zevallos recently encountered a case of relapsing fever in the San Bartolomé military hospital. The subject was a soldier who had not been away from Lima for many months. This discovery demonstrates the existence of relapsing fever in our midst. The patient presenting the disease was treated with arsphenamin, a clinical cure following a dose of 0.45 gm.

Reform in the Care of the Insane

A philanthropist here, Don V. L. Herrera, has presented the medical staff of the Magdalena Colony Asylum for the Insane with the sum of 20,000 libras to be devoted to the transformation of the care of the insane. The gift has been accepted by the authorities in charge of the institution, the Sociedad de Beneficencia of Lima. The projected reforms have met with the opposition of the sisters of the St. Vincent de Paul order who have had charge of the institution. The conflict has not yet been settled, and it seems inevitable that the sisterhood will withdraw from the work entirely. The affair is creating much discussion among the public generally and in scientific circles.

The Public Hospitals, Etc., of Lima

The Sociedad de Beneficencia of Lima in its various hospitals and asylums cared for 19,519 needy persons January to November, 1918. There were 2,394 deaths among them. The total expense was 85,400 gold libras. A Peruvian libra is almost $5. The dispensaries were visited by 80,410, including 28,919 first-time applicants, and medicines were dispensed without charge 108,718 times.

LONDON LETTER

London, March 12, 1919.

The Influenza Epidemic

Influenza continues to claim many victims, especially in Scotland, the North of England, and the Midlands. In the last weekly record there were 580 deaths from influenza and pneumonia in Glasgow, the highest record in the city's death rate, being 50 per thousand per annum. The number of deaths from the disease in Manchester last week was 191 in addition to sixty-three deaths from pneumonia and seventy-eight from bronchitis. In Leeds last week, 127 deaths were due to influenza as compared with eighty-one the previous week. In Birmingham last week there were 157 deaths, and the death rate was 31.6, as against the normal rate of 12. The total deaths numbered 527, a considerable increase. Elementary schools and nurses have responded to the call for help, and more are wanted. The Huddersfield Corporation has given notice that the Local Govenment Board has ordered that influenza shall be deemed an infectious disease. All the elementary schools in the Colne Valley have been closed for a fortnight. In Dublin the epidemic is spreading. Last week the deaths from the disease in the city numbered 143, an increase of sixty-three on the previous week. It has been decided to close the Mansion House to concerts, meetings and lectures until the disease has abated.

At a conference held at the Institute of Hygiene, Sir Malcolm Morris, the president, criticized the recommendations of the Local Government Board The solution of common salt and potassium permanganate recommended for washing the nostrils and throat he described as a horrible mixture. He had found a solution of colloidal silver beneficial. Sir St. Clair Thomson said the disease was splashed on us by persons talking, laughing, coughing and sneezing at anybody within 10 feet of them. Persons known to have the disease should be isolated, not only entirely but also locally, by making them wear veils when anybody came near them, and those in attendance on them or those who risked being near them should also wear masks or veils. Persons who in an omnibus or tube coughed without putting up their hands, or sneezed without putting up their handkerchiefs, should be prosecuted for indecency. He was inclined to think youth and fitness predisposed to the disease. In a sanatorium which he visited regularly, the consumptive patients had contracted influenza in a much milder form than their healthy attendants. But the possibility of other causes besides differences of pulmonary condition contributing to this result had to be taken into account. People might be working in an open-air sanatorium without believing in open windows for themselves. A nose in a healthy condition he did not think there was any need to wash out. He was opposed to the use of potassium permanganate or any other irritating antiseptic. The type of the influenza epidemic was certainly changing.

A government report on influenza in India states that the first influenza epidemic in Bombay city was in June last, and was responsible for more than 1,600 deaths. A subsequent virulent outbreak occurred in September, October and early in November, during which period the mortality in Bombay city exceeded the normal by 14,678. Besides bacteriologic investigation, relief measures consisted of treatment in hospitals, house-to-house visitation, supply of free milk, woolen jackets to prevent pneumonia, opening of roadside dispensaries in several wards, and supply of free medicine.

The Danger of the Spread of Lice and Itch After Demobilization

Apprehension has been felt as to the spread of lice and itch among the civil population as the result of demobilization, with consequent spread of lice-borne diseases. The Local Government Board has communicated with the Army Council on the subject and has been informed that special and thorough arrangements have been made by the army authorities, both abroad and at home, for cleansing, bathing, disinfestation, issue of clean clothing and like measures, to

be undertaken systematically before the men return to their homes on leave or on discharge. Should health officers learn of instances in which men thus returning on demobilization to their homes remain infested with vermin, the facts should be communicated to the board for their information and that of the war office. The two departments are cooperating to obtain all possible information as to the occurrence of infectious diseases among the men returning to this country.

The British Association of Radiology and Electrotherapy

A new society, the British Association of Radiology and Electrotherapy, of which Sir James Mackenzie Davidson is president and Dr. Knox and Dr. Cumberbatch are secretaries, has been formed. It is felt that the time has come to place the teaching of radiography on a sounder basis, and that the many ill-qualified persons who have been carrying on radiographic work should be discountenanced. Membership is limited to qualified physicians and dentists and to others whose qualifications and scientific attainments are considered satisfactory to the committee. The society has approached the University of Cambridge with a view to granting a diploma after examination in radiology and electrotherapeutics. Meanwhile, representations have been made to the medical schools in London and the provinces, with the object of providing the necessary teaching of the subjects for the examination of the diploma. It is also proposed to establish postgraduate courses of study and research, and to create a British school of radiology and electrology. This, it is hoped, will be coordinated with other similar schools throughout the world.

A Martyr to Science

Major H. G. Gibson, Royal Army Medical Corps, who in conjunction with two other workers, Major Bowman, Canadian Army Medical Corps, and Captain Connor, Australian Army Medical Corps, apparently made the important discovery published in the *British Medical Journal* of Dec. 14, 1918, that the influenza germ is a filter-passer, has fallen a victim to the very virulent strain of the germ with which he was experimenting. He caught the disease and succumbed to pneumonia. A career of great promise has closed. Educated at Guy's Hospital, he joined the army medical corps in 1907. In 1914 he joined the "specialist class" in bacteriology and made the highest marks in the examination which followed. When the war broke out, he left his scientific work for active service in France, where he was severely wounded by a shell. He recovered, but was unfit for active service and was appointed to the vaccine department of the Royal Army Medical College. He devoted himself to research on protection against bacillary dysentery which culminated in the production of his antidysenteric serovaccine. The reports on this remedy have been favorable, though it is too soon to state its final position.

Lectureships on Children's Diseases

At the Royal Hospital for Sick Children, Great Ormond Street, two lectureships on children's diseases have been founded by private donors, who have each given a sum of $25,000. This will be the first occasion of holding special lectureships on diseases of children. It is laid down that the lectures shall be both systematic and clinical, and that the lecturers shall be respectively a visiting physician and a visiting surgeon to the hospital in the wards of which the clinical instruction shall be given. The medical lecturer is to have "a consultative connection" with the Royal Maternity Hospital so that children born there and requiring medical or surgical treatment may be brought directly into touch with the hospital.

Marriages

THOMAS PERRINE EDMUNDSON, Lieut., M. C., U. S. Army, Pittsburgh, to Mlle. Raphaelle Degeunes of Paris, France, February 24.

WILLIAM BARCLAY PARSONS, Lieut., M. C., U. S. Army, New York City, to Miss Rose Saltonstall of Boston, March 22.

S. BROCK MCGEORGE DEAR to Miss Marjorie Pohle, both of the Bronx, New York City, March 15.

ROLAND FERDINAND WEAR to Miss Jane Mae Thrall, both of Williamsport, Pa., March 22.

MORRIS LEFF to Miss Miriam G. Kramer, both of New York City, February 11.

Deaths

Abel Fitzwater Price ⊕ Commodore, Medical Director, U. S. Navy (retired), Sandwich, Mass.; University of Pennsylvania, Philadelphia, 1868; aged 71; fleet surgeon for Admiral Dewey in the battle of Manila Bay in 1898; who entered the Navy, Nov. 10, 1868, and was retired, Dec. 13, 1909, after thirteen years and ten months of sea service on attaining the age of 62 years; died in a hospital in Springfield, Mass., March 22.

James Forrest Todd, Chicago; Bellevue Hospital Medical College, 1863; aged 78; physician of Cook County and physician in chief for the Detention Hospital for the Insane in 1889, and city physician of Chicago, and physician in chief of the Infirmary of the House of Correction and Smallpox Hospital in 1893 and 1894; died at his home, March 24, from cerebral hemorrhage.

George Washington Goins ⊕ Lieut., M. C., U. S. Army, Tooele, Utah; Marion Sims College of Medicine, St. Louis, 1898; aged 47; a specialist on diseases of the eye, ear, nose and throat; who entered the Army in November, 1918, and was stationed at Jefferson Barracks, Mo.; died at Jefferson Barracks, March 14.

Lionel Andrius Anderson ⊕ Lieut., M. C., U. S. Army, St. Paul; Washington University, St. Louis, 1916; aged 31; a specialist in roentgenology; assigned to duty with the British Army Medical Corps; died in Namur, Belgium, February 17, from pneumonia following influenza.

Robert Goldthwaite ⊕ Capt., M. C., U. S. Army, Montgomery, Ala.; Bellevue Hospital Medical College, 1893; aged 46; on duty with the American Expeditionary Forces in France; died in Base Hospital No. 26, Allery, France, September 30, from meningococcus meningitis.

Frank Reader Rix, Flushing, N. Y.; Harvard Medical School, 1879; aged 65; for eighteen years supervisor of musical education in the public schools of Manhattan borough; died in the New York Skin and Cancer Hospital, New York City, March 16.

George W. Kunz, New York City; Bellevue Hospital Medical College, 1887; aged 54; assistant surgeon to the New York Eye and Ear Infirmary; and attending otologist to the St. Bartholomew's Clinic; died in Lenox Hill Hospital, March 4, from pneumonia.

James Moore King ⊕ Chewalla, Tenn.; University of Nashville, Tenn., 1896; aged 65; professor of chemistry and clinical dermatology and secretary of the medical department of his alma mater; was struck by a train, January 5, and killed.

William A. Cochran, Danville, Ill.; Medical College of Ohio, Cincinnati, 1873; aged 68; physician of Vermilion County for seven years; died at the home of his son in Perrysville, Ind., March 16, from cerebral hemorrhage.

James Woods, Schuyler, Neb.; Western Reserve University, Cleveland, 1870; aged 74; at various times physician of Schuyler and Colfax County; a veteran of the Civil War; died at his home, March 12, from arteriosclerosis.

Bennie Logan Englerth ⊕ Lieut., M. C., U. S. Army, Anna, Ohio; Eclectic Medical Institute, Cincinnati, 1915; aged 25; on duty with the American Expeditionary Forces in France; died in France, December 16, from pneumonia.

Emmet James Stewart, Cumberland, Md.; University of Maryland, Baltimore, 1914; aged 37; a member of the Medical and Chirurgical Faculty of Maryland; died at his home, January 28, from pneumonia following influenza.

William J. S. Stewart, Act. Asst. Surg., U. S. P. H. S., Caracas, Venezuela; University of Virginia, Charlottesville, 1891; aged 52; surgeon in the Army transport service during the war with Spain; died in Caracas, March 11.

Martin Luther Mench, Jersey Shore, Pa.; University of Pennsylvania, Philadelphia, 1866; aged 73; a member of the Medical Society of the State of Pennsylvania; died at his home, February 17, from cerebral hemorrhage.

Albert N. Richardson, Chicago; Rush Medical College, 1872; aged 77; for eighteen years a quarantine physician in the health department; died suddenly, March 24, from heart disease, while making a professional call.

Carl Cleveland Smith ⊕ Lieut., M. C., U. S. Army, Akron, Ohio; Ohio State University, Columbus, 1911; aged 32; on duty with the 37th Division, American Expeditionary Forces in France; died in France, February 17.

⊕ Indicates "Fellow" of the American Medical Association.

John F. Kirkpatrick, London, Ohio; College of Physicians and Surgeons, Keokuk, Iowa, 1876; aged 69; a member of the Ohio State Medical Association; died at his home, March 12, from pneumonia following influenza.

James N. Mendenhall ✠ Plano, Texas; University of Maryland, Baltimore, 1880; aged 61; formerly clinical professor of medicine in Baylor University College of Medicine, Dallas, Texas; died at his home, March 3.

Max Landesman, New York City; Medical College of Indiana, Indianapolis, 1892; aged 55; a member of the Medical Society of the State of New York; died at his home, March 16, from arteriosclerosis.

William Ernest Barker ✠ Chanute, Kan.; American Medical College, St. Louis, 1878; aged about 73; for a time treasurer of the Kansas Medical Society; died at his home, March 13, from cerebral hemorrhage.

James Thomas Meehan, New York City; New York University, New York City, 1882; aged 59; a member of the Medical Society of the State of New York; died at his home, March 16, from heart disease.

Lucius Thomas Ingham, Lee, Mass.; Bellevue Hospital Medical College, 1886; aged 64; died in the House of Mercy Hospital, Pittsfield, Mass, March 15, two days after an operation for abscess of the neck.

James Parker Blunk, Ottawa, Kan.; Ensworth Medical College, St. Joseph, Mo., 1900; aged 44; a member of the Kansas Medical Society; died at his home, March 18, from pneumonia following influenza.

Lucy N. Tappan, Urbana, Ohio; Woman's Medical College of Pennsylvania, Philadelphia, 1886; aged 71; for twenty-seven years an instructor in her alma mater; died at her home, March 15.

Theodore D. Finck ✠ Louisville, Ky.; Kentucky School of Medicine, 1882; aged 56; died in the Norton Memorial Infirmary, Louisville, March 22, from septicemia due to an infected finger.

George Everett Herchel, Mechanicsville, Iowa; Loyola University, Chicago, 1916; aged 28; died in the University Hospital, Iowa City, March 17, a day after an operation for appendicitis.

Loving Flint Hubbell, Sidney, Ohio; Starling Medical College, Columbus, Ohio, 1901; aged 42; a member of the Ohio State Medical Association; died at his home, March 9, from pneumonia.

James Eugene Cooper, Shrewsbury, N. J.; College of Physicians and Surgeons in the city of New York, 1867; aged 74; died at his home, March 19, from cerebral hemorrhage.

William J. Donald, Riverside, Calif.; Albany (N. Y.) Medical College, 1877; aged 83; for many years a practitioner of Tunnel City, Wis.; died at his home, about March 18.

Jeremiah W. Brinson, Wrightsville, Ga.; Savannah (Ga.) Medical College, 1875; aged 66; a member of the Medical Association of Georgia; died at his home, March 11.

Rembert Trezevant, Evangeline, La.; Memphis (Tenn.) Medical College, 1869; aged 78; a member of the Louisiana State Medical Society; died at his home, March 7.

Perrin O. Mauldin ✠ Decatur, Ga.; Georgia College of Eclectic Medicine and Surgery, 1910; aged 42; died in a hospital in Atlanta, March 17, from pneumonia.

Levi K. Slifer, Philadelphia; University of Pennsylvania, Philadelphia, 1872; aged 64; died at his country home, near Blue Bell, Pa., March 16, from heart disease.

Joseph Boardman Moore, Aylett, Va.; Jefferson Medical College, 1856; aged 84; a member of the Medical Society of Virginia; died at his home, March 23.

Clara Ann Martin Cooper, Henderson, Ill.; College of Physicians and Surgeons, Keokuk, Iowa, 1898; aged 49; died at her home, about March 15.

Stephen R. Wilson, Celina, Ohio; Medical College of Fort Wayne, Ind., 1881; aged 89; died at the home of his son in Liberty Township, March 14.

Horace Clay Wiggins, Succasunna, N. J.; Albany (N. Y.) Medical College, 1873; aged 74; died at his home, January 12, from bronchopneumonia.

Leonard M. Charlton, Cleveland; Homeopathic Hospital College, Cleveland, 1865; aged 60; died at his home, March 5.

Augustus B. Lanier, Oliver, Ga.; Oglethorpe Medical College, Savannah, Ga., 1860; aged 88; died at his home, March 1.

James P. Dill, Hale, Mo.; Joplin (Mo.) College of Physicians and Surgeons, 1883; aged 76; died at his home, March 5.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION

STEVENS CONSUMPTION CURE

A Discredited London Quack Attempts to Exploit Canadian Veterans

THE JOURNAL has received the following letter from Dr. J. H. Holbrook, physician-in-charge of the Mountain Sanatorium for the treatment of pulmonary tuberculosis at Hamilton, Ont.:

> "We are treating returned tuberculous soldiers, who are receiving 'literature' from Chas. H. Stevens of 204-206 Worple Road, Wimbledon, London, S.W., and some of our men are being duped into sending their money to him for treatment.
>
> "We have tried to warn them that they are wasting their money, but we have no definite information on the matter and if you can furnish us with any of the particulars, we would be greatly obliged in the interest of our patients. We have a booklet giving extracts from the medical evidence given in the consumption cure libel actions, by Stevens, against the British Medical Association, and know that there must be considerable information available."

Profitable quackery dies hard and quackery of the "consumption cure" type is peculiarly profitable. For years C. H. Stevens has been in that most disreputable of businesses—

WORLD-WAR AGAINST CONSUMPTION

Special

THE "MYSTERIOUS CONTINENTAL CONTRIBUTION TO THE CRUSADE AGAINST THE WHITE DEATH."

CRUSADE AGAINST CONSUMPTION

Greatly reduced facsimile of a portion of a large advertisement of "Sacco" in a London paper in 1910.

exploiting the consumptive.[1] He was shown up by the London *Truth* years ago, and brought suit for libel against that publication—without obtaining, however, any satisfaction. His nostrum has been exploited in South Africa, England and the United States. It was analyzed by the chemists for the British Medical Association, and the method of exploitation exposed in the British Medical Association's book, *Secret Remedies.* This was in 1908. After waiting three years, Stevens sued the association. At the first hearing in 1912, the jury failed to agree; at the second hearing in 1914, the jury declared that the association's strictures were not libelous but fair comment. Stevens then appealed the case—and again lost.

The analysis made by the British chemists showed the stuff to contain no active drugs except alcohol, of which there was over 23 per cent., and glycerin, of which there was less than 2 per cent. The estimated cost of the ingredients of a bottle

1. THE JOURNAL has discussed this man's business at various times. See issues of Sept. 3, 1910; April 5, 1913; Sept. 12, 1914; June 12, 1915.

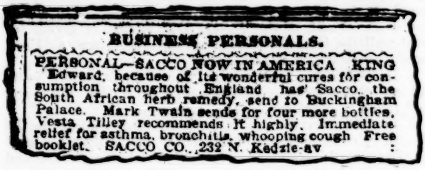
of Stevens "consumption cure" was 3 cents; it sold for $1.25. Stevens published what he termed a "formula" for his nostrum, thus:

"Its formula is 80 grains of Umckaloabo root and 13⅓ grains of Chijitse to every ounce, prepared according to British Pharmacopeia method."

Making a pretense of frankness by glibly giving meaningless names evolved from a fertile imagination is a scheme as old and as unscrupulous as quackery itself. But the unknown may always be counted on to inspire awe and Stevens' crude deceit still seems to be a financial asset.

THE "WONDERFUL NATIVE HERB" HUMBUG

Nor was the "formula" the only piece of theatrical claptrap worked by Stevens. He claimed to have learned of "Umckaloabo" while in South Africa some years ago where



BUSINESS PERSONALS.

PERSONAL—SACCO NOW IN AMERICA. KING Edward, because of its wonderful cures for consumption throughout England has Sacco, the South African herb remedy, sent to Buckingham Palace. Mark Twain sends for four more bottles. Vesta Tilley recommends it highly. Immediate relief for asthma, bronchitis, whooping cough. Free booklet. SACCO CO., 232 N. Kedzie-av

Facsimile (slightly enlarged) of an advertisement of "Sacco" that appeared in a Chicago newspaper in November, 1908. In spite of the fact that Vesta Tilley, King Edward and Mark Twain were all said to be greatly impressed with the marvel, "Sacco" failed to get a foothold in Chicago.

he went because he had consumption. While in Basutoland he lived in a tent and partook of a decoction of a native root "Umckaloabo"—given him by a kafir! Needless to say, it cured him! The commercial possibilities of "Umckaloabo" appealing to Stevens he went to Capetown, South Africa, where he put the stuff on the market under the name of "Sacco"—"Stevens African Consumption Cure, Original"—doing business under the trade name of "Sacco, Limited." Capetown was a verdant field for Stevens made a large amount of money while there, and opened a branch office in London. At a time that he was clearing a net profit of $15,000 a year, he got into the courts and found it expedient to leave Capetown.

"SACCO" BECOMES "LUNGSAVA"

He then went to Johannesburg, where "Sacco" was rechristened "Lungsava," and was sold by Stevens under the imposing trade name "South African Institute of Medicine." While here he added to his nostrum another unheard-of herb, which he called "Chijitse." Johannesburg seems to have taken to the nostrum, but after being twice convicted of violating the laws governing medical practice, Stevens left South Africa and went to England, where he located in Wimbledon, a London suburb. Here he began pushing his stuff under the old name, "Sacco."

AN INTENTIONAL FRAUD

In 1910 while at Wimbledon, Stevens was sued by a widow for $50, the sum promised by Stevens in his advertisements, to any patient whom he did not cure of consumption. The plaintiff's husband relying on Stevens' nostrum, of course, died. In giving judgment for the payment of $50 to the widow the judge thus expressed his opinion of Stevens and his "cure":

"I will now say what I think and what I had abstained from doing before. I think this is an intentional and well-considered fraud. It is a scandalous thing that poor people should be imposed upon and led to part with their money, and to hope that those dear to them would be cured, by those processes which were nothing but quack remedies, and had not the slightest value of any kind."

In spite of the judge's eminently just characterization of Stevens and his business, this quack had the effrontery to bring suit against the British Medical Association a year later—in 1911, with results that have already been mentioned. Stevens, in his appeal to the higher courts, after losing the case, attempted to make much of what he claimed was the personal nature of the attack on him by the British Medical Association. One of the judges of the appellate court, however, pointed out that a comment may be fair even though it contains a personal attack, this rule having been clearly stated by Lord Atkinson in the classic case of *"Dakhyl* v. *Labouchere"* (1908, 2 K.B., 329), which was carried to the House of Lords in 1908, where it was laid down that:

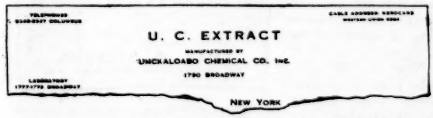
"A personal attack may form part of a fair comment upon given facts truthfully stated, if it be warranted by those facts."

The "Sacco Co.," London, of the original Capetown Sacco concern, went into liquidation. Stevens has claimed that a man named Pickering bought the right to use Sacco from the liquidator, and that he (Stevens) no longer has any interest in the company of that name. Before leaving the "Sacco" stage of Stevens' multinamed nostrum it is worth recalling that in 1908 an attempt was made to float this humbug in Chicago. Advertisements appeared in Chicago papers describing the alleged enthusiasm for Sacco exhibited by King Edward, Vesta Tilley and Mark Twain! The Chicago venture failed.

THE UMCKALOABO CHEMICAL COMPANY

Not long after Stevens lost his case against the British Medical Association, an item appeared in an Albany, N. Y., paper, regarding the incorporation of the "Umckaloabo Chemical Company" of New York City, capitalized at a quarter-million dollars, for the purpose of acquiring the "secret processes for manufacturing a remedy for tuberculosis and other diseases, discovered by Charles H. Stevens of London." The incorporators of this new company were given as Samuel S. Ryckman, Edward A. Sprong and Irene B. Russell, all of New York City. This was in October, 1914.

In September, 1915, newspaper advertisements appeared, asking for the names of those who were suffering from tuberculosis, so that "an absolute aid in curing tuberculosis" that had been introduced in the United States from London, might be brought to their attention. There was no name signed to the advertisements; neither was the name of the preparation given. Sufferers were urged to write to Room 3240, Woolworth Building, New York City. Some who answered the advertising received a typewritten letter from the Umckaloabo Chemical Co., of 1790 Broadway, New York, which was selling "U. C. Extract." With it was a testimonial, and a typical nostrum "analyst certificate," the latter signed by one J. P. Lord of London. This same "analyst" was referred to at some length at the trial of *Stevens* v. *British Medical Association*. It appears that Lord was an employee of



U. C. EXTRACT

MANUFACTURED BY
UMCKALOABO CHEMICAL CO. INC.
1790 BROADWAY

NEW YORK

Greatly reduced facsimile of letterhead used by the Umckaloabo Chemical Company, which attempted to exploit Stevens' nostrum in the United States in 1915. This concern also seems to have fizzled.

Stevens; he received $7.50 (30 shillings) a week. Although Stevens attempted to "play up" the analysis in the trial, he did not, at the second trial, put the analyst on the stand. The following quotations from the evidence will help one to estimate the possible scientific standing of Analyst Lord. Stevens was being questioned:

Question.—"Is he [J. P. Lord] alive?"

Answer.—"I do not know."

Question.—"Is he not in a Church Army Home and a dipsomaniac?"

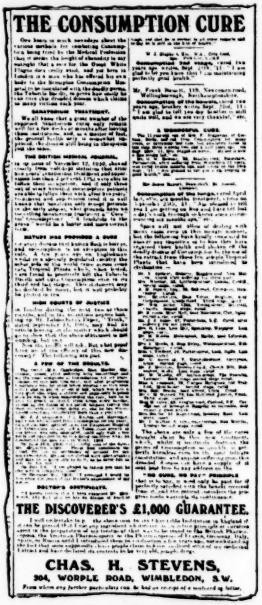
Answer.—"I do not know."

A year later—July, 1916—the same analysis and the same lone testimonial were being sent out, together with a typewritten sheet giving the "History of the Discovery of Umckaloabo." This "history" referred to the "attacks" by London *Truth* and the *British Medical Journal*, and recorded the fact that, in refutation, Stevens had sued the British Med-

ical Association. It failed to record, however, the outcome of the libel suit, leaving the impression that Stevens was the victor. The "history" explained further that the president of the Umckaloabo Company was "Samuel S. Ryckman, former Member of Parliament of the Dominion of Canada," who had secured the American rights to "Stevens' discovery," and that "wonderful results have been accomplished by reputable physicians of New York City, who are convinced that Umckaloabo Extract has produced specific action upon the lungs"!

"SACCO" "LUNGSAVA" BECOME "U. C. EXTRACT"

In transporting this humbug across the Atlantic, still another name has been given to it. No longer is it "Sacco" or "Lungsava"; it is now "Umckaloabo Extract," or, more briefly, "U. C. Extract," the two letters standing, respectively, for "Umckaloabo" and "Chijitse." In addition to the "history," Lord's "analysis," and the one single testimonial for the "cure" itself, there were two testimonials for Mr. Ryckman, one from Adam Brown, postmaster of Hamilton, Ontario, and the other from S. D. Biggar, the mayor of Hamilton, Ontario. The letters accompanying the advertising material were signed "Samuel S. Ryckman"; one of them referred to analyst Lord as "one of the principle analysts of London, England."



THE CONSUMPTION CURE

THE DISCOVERER'S £1,000 GUARANTEE.

CHAS. H. STEVENS,
304, WORPLE ROAD, WIMBLEDON, S.W.

Photographic facsimile (reduced) of one of Stevens' advertisements, appearing a few years ago in a London paper. The original measured about 11 inches by 5 inches. Among the names listed in this advertisement of those who had been "cured" by Stevens' nostrum was one Miss Olley, of whom Stevens said: "Carried out of Brompton Hospital as incurable, now enjoying good health." The facts are, Miss Olley died of pulmonary tuberculosis.

Since 1916 we have received no further information regarding the exploitation of "U. C. Extract," or of the activities of the Umckaloabo Co. Whether the business failed to be the financial success that had been looked for, or whether Mr. Ryckman, after further investigation, decided to go into some more reputable line of endeavor, we are unable to say.

Now, in 1919, Stevens plies his abominable trade among the tuberculous victims of the great war. He sends to Canadian soldiers a gaudy covered booklet containing some of the testimony of his "experts" who testified at the *first* trial of his libel suit against the British Medical Association. It leaves the impression that Stevens won the suit. The booklet declares that the British Medical Association charged Stevens "with being a swindler and a quack who foisted upon the public a so-called remedy which he knew to be absolutely worthless." But it does not tell the consumptives, whose dollars are sought, that the court held the British Medical Association's charge to be the truth and a fair comment of fact!

The ubiquitous "analysis" of Lord—the 30-shillings-a-week "expert"—is also part of Stevens' present advertising paraphernalia. Then there is a loose-leaf booklet of testimonials. The loose-leaf idea seems a good one—commercially. THE JOURNAL has shown repeatedly in cases of testimonials for "consumption cures"—testimonials which were written in good faith by those who believed themselves benefited—that where the poor victims really had the disease and were relying on the nostrum it was only necessary to wait some months or a year or two before it was possible to obtain the death certificate of the testimonial givers. In the past this has meant that the quack must "scrap" a lot of "literature" or lay himself open to the charge of publishing testimonials from dead men. The loose-leaf method employed by Stevens will facilitate the elimination of "dead timber" at a minimum expense.

That Stevens, after being thoroughly discredited, first in South Africa and later in England, should now be trying to capitalize the suffering of Canadian soldiers who have contracted tuberculosis in the service of their country, is entirely in keeping with the moral standards of the "consumption cure" quack. The most effective protection of the sick from the wiles of men of the Stevens type is that of giving the public all the facts possible regarding such concerns. Here, briefly summarized, are the facts:

1. In 1904 Stevens was selling "Sacco" in Capetown, South Africa. When clearing $15,000 a year, he got into the courts and found it expedient to leave Capetown.

2. In 1906 Stevens was in Johannesburg, trading as the "South African Institute of Medicine" and selling his stuff as "Lungsava"; was twice convicted of violating the law and left for England.

3. In 1907 Stevens was in London selling his "cure" and in 1910 was declared by the courts to be guilty of "intentional and well considered fraud," and his "cure" denounced as "nothing but quack remedies."

4. In 1908 the British Medical Association denounced Stevens as a quack and declared his nostrum worthless; and when Stevens sued the association the courts, in 1914, agreed that the characterization was justified.

5. In 1915 Stevens' "cure" appeared in the United States under the name of "U. C. Extract," exploited by the Umckaloabo Chemical Company of New York City. This apparently was not a commercial success.

6. Today Stevens is attempting to exploit tuberculous Canadian soldiers who have acquired the disease in the service of their country.

Correspondence

ATYPICAL FORM OF STREPTOCOCCUS VIRIDANS

To the Editor:—In an article on "Prophylactic Inoculation Against Respiratory Infections During the Present Pandemic of Influenza" (THE JOURNAL, Jan. 4, 1919, p. 31), Dr. E. C. Rosenow described an atypical form of *Streptococcus viridans,* as it occurred in and about Rochester, Minn. This description corresponds so closely with that of the prevalent type of *Streptococcus viridans,* as it occurred at Camp Shelby, Miss., during the winter and spring of 1918, that I think it worth while to draw attention to it.

My description of the peculiar type of *Streptococcus viridans* at Camp Shelby, Miss., which I had the opportunity of studying only during the latter part of the epidemic (April, May and June, 1918), was presented as part of the report by Major George L. Lathrope, M. C., before the Section on Practice of Medicine at the Sixty-Ninth Annual Session of the American Medical Association, Chicago, June, 1918 (THE JOURNAL, Aug. 10, 1918, p. 451). In the discussion of Major Lathrope's paper I went a little more in detail into the bacteriologic characteristics of this organism, and into the clinical features and mortality of the cases of pneumonia and empyema, caused by an infection with this organism.

As there is no mention of Major Lathrope's report in Dr. Rosenow's paper, it is probable that he has overlooked it. This communication will possibly help to draw his attention to it, so that he will be able to add the additional information to the final report which he evidently intends to make on the prophylactic inoculations against respiratory diseases.

I might add, as a point of interest, that I have recently isolated from the lungs in a case of pneumonia that came to necropsy at Savenay, France, an identical organism which had produced in the patient a fatal pneumonia complicated by an empyema.

One of the important features of the empyemas caused by this peculiar type of *Streptococcus viridans* was the great tendency to the encapsulation of the pus. The pus formed pockets that were difficult to diagnose except by the roentgen ray. The mortality of the empyema cases was also very low, not more than 10 per cent. Both these features indicate the relative attenuation of the virulence of this organism as compared, for instance, with *Streptococcus hemolyticus.*

ABRAHAM ZINGHER, Capt., M. C., U. S. Army,
Base Laboratory, Base Section No. 5.
A. P. O. 716, A. E. F., Brest, France.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

BOOKS FOR STUDENTS OF SPANISH

To the Editor:—Please recommend a list of books for reviewing and extending one's knowledge of the Spanish language. The following is the type of books I have in mind:

1. Spanish-English grammar and lessons, designed for English speaking students.
2. Spanish lexicon, general.
3. Spanish lexicon, medical.
4. Set of readers, beginning with primer as used in common schools.
5. Osler's textbook of Medicine—Spanish text.
6. Other Spanish medical texts.

V.

ANSWER.—The number of books for "reviewing and extending one's knowledge of the Spanish language" is practically legion. All have their advantages and their defects, and choice must rest with the individual.

1. Otto-Sauer (Wycil & Co.); Cortina (R. D. Cortina Company); Berlitz; De Tornos (D. Appleton & Co.); Hossfeld (Caspar & Co.); Hall (World Book Company); Rosenthal (International College of Languages); Hugo (Sissmann & Son); Whittem & Andrade (Heath). Certain inexpensive booklets, like "Spanish Self Taught," by F. Thimm, give the phonetic pronunciation and an epitome of the grammar.

2. The standard grammar and dictionary are those of the Royal Spanish Academy (La Real Academia Española) published by Hernando y Compañia in Madrid. There are a number of Spanish-English dictionaries, practically all of which leave much to be desired. Among these are Velázquez' (D. Appleton & Co.); Cuyás' (D. Appleton & Co.); MacDonald's (Pitman); McLaughlin's (David McKay); Nelson's (Thomas Nelson & Sons); Appleton's; Wessely's (David McKay); Casares' (Saturnino Calleja).

3. There is no standard Spanish medical dictionary which can be compared to books of this character in English. Several small dictionaries have been published, mostly adaptations from the French or the German. Among these are Garnier's & Delamare's (Bailly-Baillière); and Galtier-Boissière's (Larousse).

4. Sets of Spanish readers for use in schools have been published by a number of American houses, such as the American Book Company, Ginn & Co., and D. Appleton & Company. The same houses have also published a number of more advanced books for similar use.

5. Osler's textbook of medicine—D. Appleton & Co.—has been translated into Spanish.

6. Most Spanish medical books are translations from the French or the German. In our Spanish Edition appear advertisements of some American books translated into Spanish. Among standard books written by Spanish physicians in use in Spanish schools may be mentioned:

Manual de Medicina Interna—three volumes. Publicado bajo la dirección de los Drs. Teófilo Hernando y Gregorio Marañón. Published by Ruiz Hermanos, Madrid, Spain.
Compendio de Parasitologia. By Dr. G. Pittaluga and published by the Libreria de la Facultad de Medicina, Calle Atocha, Madrid.
Patologia General. By Dr. A. Gimeno (former minister of the interior) which can also be ordered through the foregoing booksellers.

Any reliable bookseller will order the books mentioned above, especially those in the importing business, as Brentano's, Fifth Avenue, New York, and P. B. Hoeber, 67 East Fifty-Ninth Street, New York. They could also be purchased directly from some Havana firm, as Ricardo Veloso, Galiano Num. 62, Havana.

We may add that we are now contemplating the publication of a booklet containing the English and Spanish equivalents of those terms most in use in the daily practice of a physician. Scientific terms derived from Latin and Greek are generally recognizable without a dictionary.

PREPARATION OF SURGICAL SOLUTION OF CHLORINATED SODA (DAKIN'S SOLUTION)

To the Editor:—Please publish the formula of Dakin's solution or the best solution of this kind recommended.

W. A. VON ZELLEN, L'Anse, Mich.

ANSWER.—According to New and Nonofficial Remedies, 1919, surgical solution of chlorinated soda may be prepared:

1. By the electrolysis of a sodium chlorid solution. This method is applicable only where there is suitable apparatus and electric current.

2. By the action of chlorin on sodium carbonate. This may be done either by the use of a specially devised apparatus to measure the chlorin, or by the use of ampules containing a definite weight of chlorin; such ampules are introduced into a container holding a solution of sodium carbonate of the required strength, and after the container is tightly stoppered the ampule is broken to permit the chlorin to react with the sodium carbonate.

3. By the interaction of chlorinated lime ("bleaching powder") and sodium carbonate solutions with subsequent treatment with either (*a*) boric acid or (*b*) sodium bicarbonate to reduce the alkalinity, as follows:

(*a*) *Dakin's Method.*—A strong solution of hypochlorite is prepared as follows:

Mix thoroughly 150 gm. of chlorinated lime and 500 c.c. of water, and to this mixture add 105 gm. of monohydrated sodium carbonate dissolved in 500 c.c. of water. After standing several hours with frequent shaking, the mixture is filtered and a measured portion (20 c.c.) rapidly titrated with half-normal boric acid solution using *powdered* phenolphthalein as an indicator, in order to determine the amount of boric acid to be added to the remainder of the filtrate (each cubic centimeter of half-normal boric acid indicates 3 gm. of boric acid to be added). It is best to add slightly less than the calculated amount of boric acid. The concentrated solution thus prepared contains about 4 per cent. sodium hypochlorite and may be kept for a month without serious decomposition if protected from light. Before use it should be diluted to its proper strength—usually 1 volume mixed with 7 volumes water—as determined by titration.

(*b*) *War Demonstration Hospital Modification of Daufresne's Method.*—The percentage of available chlorin in the chlorinated lime to be employed is first determined.

To make about 40 liters: Place in a 20 liter container the amount of chlorinated lime indicated in the following table; mix this well with 5 liters of tap water and allow to stand several hours.

"Available" Chlorin in Chlorinated Lime, Per Cent.	Chlorinated Lime for 5 Liters Water, Gm.	Monohydrated Sodium Carbonate in 5 Liters Water, Gm.
20-26	800	700
28-34	600	490
36-42	500	390

Dissolve the designated amount of monohydrated sodium carbonate in another 5 liters of water, and pour the solution into the bottle containing the chlorinated lime; mix thoroughly and allow the calcium carbonate to settle. (If all the calcium is not precipitated, add small amounts of sodium carbonate solution until precipitation is complete.) Siphon off the supernatant liquid through a double filter. This concentrated and alkaline solution will keep for several weeks. For use it is treated as follows: A measured portion (from 20 to 50 c.c.) is titrated with 10 per cent. hydrochloric acid until the red color produced by the addition of solid phenolphthalein disappears (more solid phenolphthalein is added to determine that decolorization was not due to bleaching). The calculated amount of 10 per cent. hydrochloric acid is then added to the original specimen, having a volume designated "V." After the acid has been added, a volume the same as "V" of 6.25 per cent. sodium bicarbonate solution is added. The chlorin content of this concentrated solution is now determined by the method prescribed for the assay of solution

of chlorinated soda, U. S. P., and it is then diluted to the proper strength.

This solution should meet the following requirements:

If to 20 c.c. of surgical solution of chlorinated soda about 0.02 gm. of phenolphthalein powder is added, no red color develops on agitation (*absence of excessive alkalinity*).

If to 5 c.c. of the solution contained in a test tube about 0.5 c.c. of 1 per cent. alcoholic solution of phenolphthalein is added ("squirted"), a red color should form and soon disappear (if there is no red flash, the alkalinity is too low).

If the available chlorin of surgical solution of chlorinated soda is determined by the assay method for solution of chlorinated soda, U. S. P., it should contain not less than 0.38 gm. nor more than 0.48 gm. of available chlorin in 100 gm., equivalent to not less than 0.4 gm. nor more than 0.5 gm. of sodium hypochlorite (NaOCl) in 100 gm.

BONUS TO DISCHARGED MEDICAL OFFICERS

To the Editor:—Is a medical officer who was honorably discharged from the service on Jan. 30, 1919, entitled to the bonus of $60 which is now being given to discharged soldiers? If so, to whom is an application for the bonus to be made? Please omit my name.

K. C. D.

ANSWER.—Yes. According to Section 1406 of the Revenue Act of 1918, all persons serving in the military or naval forces of the United States during the present war who have, since April 6, 1917, resigned or been discharged under honorable conditions (or, in the case of reservists, been placed on inactive duty), or who at any time hereafter (but not later than the termination of the current enlistment or term of service) in the case of the enlisted personnel and female nurses, or within one year after the termination of the present war in the case of officers, may resign or be discharged under honorable conditions (or, in the case of reservists, be placed on inactive duty), shall be paid, in addition to all other amounts due them in pursuance of law, $60 each.

This amount shall not be paid (1) to any person who, though appointed or inducted into the military or naval forces on or prior to Nov. 11, 1918, had not reported for duty at his station on or prior to such a date; or (2) to any person who has already received one month's pay under the provisions of Section 9 of the act entitled "An Act to authorize the President to increase temporarily the military establishment of the United States," approved May 18, 1917; or (3) to any person who is entitled to retired pay; or (4) to the heirs or legal representatives of any person entitled to any payment under this section who has died or may die before receiving such payment. In the case of any person who subsequently to separation from the service as above specified has been appointed or inducted into the military or naval forces of the United States and has been or is again separated from the service as above specified, only one payment of $60 shall be made.

The foregoing amount, in the case of separation from the service prior to the passage of the act, will be paid as soon as practicable; in the case of separation from the service after the passage of the act, payment is made at the time of discharge.

Claims for the bonus should be sent to the Zone Finance Officer, Lemon Building, Washington, D. C. The application for bonus should be accompanied by (*a*) the discharge certificate or a certified copy thereof, (*b*) a statement of all military service since April 6, 1917, and (*c*) the address to which the check should be sent.

PROCAIN ANESTHESIA

To the Editor:—1. Is there any evidence of latent injury to the dental nerves from repeated injections of procain by dentists to control hypersensitiveness of teeth when operating on them? 2. Is it possible that the irritation of from twenty to thirty injections into one section of a nerve within two or three years may produce degenerative changes or start new growth? 3. Is it a safe risk for a 15-year-old patient?

G. W. FITZ, M.D., New York.

ANSWER.—1. There is no evidence of latent injury to the dental nerves from repeated injections of procain to control supersensitiveness of the teeth. If an isotonic solution is used and this solution made thoroughly sterile by boiling, it is not probable that it will be injurious.

2. It would hardly seem probable that a new growth would be started by the injection of procain into the nerves supplying the teeth.

3. No bad effects need be expected from the cautious use of procain anesthesia for children 15 years of age or younger.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

ARKANSAS: Little Rock, May 13. Sec. Eclectic Bd., Dr. C. E. Laws, 803½ Garrison Ave., Ft. Smith; Sec. Regular Bd., Dr. T. J. Stout, Brinkley.

DISTRICT OF COLUMBIA: Washington, April 9-11. Sec., Dr. Edgar P. Copeland, The Rockingham, Washington.

FLORIDA (H): Jacksonville, April 8. Pres., Dr. Chas. W. Johnson, 33 E. Monroe St., Jacksonville.

NATIONAL BOARD OF MEDICAL EXAMINERS: Philadelphia, June 2-7. Sec., Dr. J. S. Rodman, 1310 Medical Arts Bldg., Philadelphia.

NEVADA: Carson City, May 5. Sec., Dr. S. L. Lee, Carson City.

NEW MEXICO: Sante Fe, April 14-15. Sec., Dr. W. E. Kaser, East Las Vegas.

NEW YORK: Albany, Buffalo, New York and Syracuse, May 20-23. Mr. George M. Wiley, director, Exam. and Inspections Div., State Edu. Bldg., Albany.

OKLAHOMA: Oklahoma City, April 8-9. Sec., Dr. J. J. Williams, Weatherford.

UTAH: Salt Lake City, April 7-8. Sec., Dr. G. F. Harding, Templeton Bldg., Salt Lake City.

Special Courses in British and French Universities

A letter from Lieut.-Col. James A. Harvey, Perequeux Hospital Center, France, reports that British and French universities have arranged to enroll American officers and soldiers in special four-month courses in letters, science, law and medicine. The courses were to begin about February 16 and end about June 30. It is estimated that 11,000 soldiers have been enrolled and that the number will reach 20,000. Only men of excellent military character, who have completed, as a minimum, two years of college work or its equivalent, have been enrolled. For those entering the French universities a moderate knowledge of French was required. Officers and soldiers electing the courses have been placed on detail service for the period of study; they receive $2 per day for subsistence and the actual cost for room rent not to exceed $1 a day; traveling expenses are also paid by the government, but the student himself is required to pay the tuition charges which amount to about 250 francs ($48.25). Soldiers retain their full equipment without arms or ammunition. In France medical courses are being given at Toulouse, Paris and Lyons; and in the English universities at London and Liverpool.

Minnesota January Examination

Dr. T. S. McDavitt, secretary of the Minnesota State Board of Medical Examiners, reports the oral, practical and written examination held at Minneapolis, Jan. 7-9, 1919. The examination covered 15 subjects and included 80 questions. An average of 75 per cent. was required to pass. Five candidates were examined, all of whom passed. Three candidates were licensed through reciprocity. The following colleges were represented:

College PASSED	Year Grad.	Per Cent.
Rush Medical College	(1918)	78
University of Illinois	(1919)	86
Harvard University	(1917)	92
Tufts College Medical School	(1911)	79
Syracuse University	(1909)	83

College LICENSED THROUGH RECIPROCITY	Year Grad.	Reciprocity with
Northwestern University	(1918)	Illinois
Western Pennsylvania Medical College	(1904)	Penna.
University of Toronto	(1905)	Illinois

South Dakota January Examination

Dr. Park B. Jenkins, secretary of the South Dakota State Board of Health and Medical Examiners, reports the practical and written examination held at Pierre, Jan. 14-16, 1919. The examination covered 15 subjects and included 110 questions. An average of 75 per cent. was required to pass. Of the 4 candidates examined, 3 passed and 1 failed. The following colleges were represented:

College PASSED	Year Grad.	Per Cent.
Chicago College of Medicine and Surgery	(1911)	92.7
Indiana Medical College (Purdue Univ.)	(1907)	92
Eclectic Medical Institute	(1877)	77.3
FAILED		
Northwestern University	(1908)	67.1

Book Notices

LES BORGNES DE LA GUERRE: PROTHÈSE CHIRURGICALE & PLASTIQUE (Valois et Rouveix). Par le Dr. G. Valois, Membre de la Société d'Ophtalmologie de Paris. Paper. Price, 12 francs. Pp. 228, with illustrations. Paris: Masson & Cie, 1918.

This treatise is essentially a contribution—and a most valuable one—to military ophthalmology, especially as regards the physical reconstruction of visual organs, damaged or destroyed by engines of war. The author confines his remarks to a consideration of the borgne, or "one-eyed" victim of battle. It is a matter of regret that we have no one word in English exactly corresponding to this term. As the advertisement points out, the experienced surgeon, during times of peace, was generally able to meet the requirements of most bulbar and orbital injuries and diseases calling for removal of the eyeball. He got along with some simple form of enucleation or its substitutes, modified to suit special cases, such as exenteration, amputation of the anterior segment of the eye, etc. Now and then, but still rarely, he was called on to do a plastic operation on the lids, to restore a lost conjunctival sac, or to deal with a contracted and cicatricial socket so that the patient might wear an artificial eye.

The advent of war and the appearance of large numbers of war wounded patients with severe orbitofacial injuries changed all this; the ophthalmic surgeon was no longer able to confine his technic to a few old and familiar methods. It seemed as if each case called for special treatment, involving some decided modification of an old or the adoption of an entirely new plan of surgical procedure. To this demand for new and more elaborate operative measures the military situation added other difficulties—insufficient stocks of prostheses (sometimes an entire lack of artificial eyes), dearth of special workmen, and so on. One of the results of these conditions was to bring about in France (as in some other countries) a coordination of the various factors in the usual supply of material—surgical and artistic—for the benefit of those soldiers whose wounds required them. In addition to these precautions, the medicomilitary authorities of the Thirteenth Region created a studio for the study of the subject and for the manufacture of ocular and orbital masks and other prostheses for the improvement of the cosmetic appearance of those unfortunates with extensive orbital injuries. The output of this studio is pictured in both the text and plates of the volume.

The name of Dr. Valois is familiar to ophthalmic surgeons, and he has freely given us not only his own wide experience, but also that of other well-known operators. The book abounds in descriptions and illustrations of the many methods employed to relieve the great variety of injuries involving the tissues of the face, lids and orbital walls. Especially does the author discuss the numerous plastic operations now in vogue, and he describes the steps of these operations in detail. In fact, the monograph may be regarded as an oculoprosthetic textbook with special chapters on orbital masks, molds and other cosmetic contrivances. The one criticism one might make is of the illustrations—both the colored plates and the black and white cuts in the text are very poor, and are entirely unworthy of this otherwise admirable treatise. However, many of them are useful as diagrams, and since diagrammatic illustration in a work of this sort is of prime importance, one may accept them as meeting the chief demand.

THE SURGERY OF ORAL DISEASES AND MALFORMATIONS: THEIR DIAGNOSIS AND TREATMENT. By George Van Ingen Brown, D.D.S., M.D., C.M., Major, Medical Officers' Reserve Corps, U. S. Army. Third edition. Cloth. Price, $7. Pp. 734, with 570 engravings. Philadelphia: Lea & Febiger, 1918.

This edition, with the exception of a chapter that has been added on war surgery, does not differ materially from the edition immediately preceding. In connection with the chapter on war surgery there are a number of illustrations showing the results of gunshot wounds of the face and jaws, together with methods for plastic and other restorations, methods of splinting of fractured jaws, and bone grafting. The illustrations in this chapter and the description of cases are for the most part drawn from the results of the experiences of a number of different surgeons who were actually engaged in reconstruction work, in the hospitals of France. The book is comprehensive, covering most of the diseases, injuries and malformations found about the face, mouth and jaws.

Social Medicine, Medical Economics and Miscellany

Program of the Public Health Service, Intended Especially to Meet After-the-War Needs

This program meets urgent national needs by outlining health activities which are practicable and which will yield the maximum result in protecting national health and diminish the annual toll of thousands of lives taken by preventable diseases and insanitary conditions. The success of this program will depend on the active cooperation of federal, state and local health authorities. Experience has shown that this cooperation can best be secured on the federal aid extension principle.

1. Industrial hygiene:

(*a*) Continuing and extending health surveys in industry with a view to determining precisely the nature of the health hazards and the measures needed to correct them.

(*b*) Securing adequate reports of the prevalence of disease among employees and the sanitary conditions in industrial establishments and communities.

(*c*) National development of adequate systems of medical and surgical supervision of employees in places of employment.

(*d*) Establishment by the Public Health Service, in cooperation with the Department of Labor, of minimum standards of industrial hygiene and the prevention of occupational diseases.

(*e*) Improvement of the sanitation of industrial communities by officers of the Public Health Service, cooperation with state and local health authorities, and other agencies.

(*f*) Medical and sanitary supervision by the Public Health Service of civil industrial establishments owned or operated by the federal government.

2. Rural hygiene:

(*a*) Federal aid extension for establishment and maintenance of adequate county health organizations in counties in which the county and state governments, separately or together, will bear at least one half (usually two thirds) of the expense for reasonably intensive rural health work; county health officer to be given status in national health organization by appointment as field agent of the Public Health Service at nominal salary; sanitary inspectors and health nurses also to be given official status in the Public Health Service.

(*b*) Detail of specially trained officers of the Public Health Service to formulate and carry out, in cooperation with local authorities, intensive campaigns for the sanitation of groups of rural towns, the work to be directed especially toward securing safe water supplies, cleanly disposal of human excreta, pasteurization of milk supplies, and bedside control of cases of communicable disease.

(*c*) Studies by a special board of service officers to determine improved methods of rural sanitation, the studies to be confined to the most practical and essential phases of the subject.

(*d*) Widespread dissemination of the simple rules for rural sanitation through various governmental and civil agencies, such as the bureaus and divisions of the Department of Agriculture, the Farm Loan Board, agricultural colleges, public-school boards, farmers' associations, and women's clubs.

3. Prevention of the diseases of infancy and childhood:

(*a*) Through cooperation with the Children's Bureau, the American Red Cross, and other recognized agencies in promoting measures for child and maternal welfare.

(*b*) Through prenatal care by promoting:

(1) The adoption of measures for the adequate care and instruction of expectant mothers through visiting nurses, prenatal clinics, lying-in facilities, attention during confinement, and regulation of the practice of midwifery under medical supervision.

(2) Safeguarding of expectant mothers engaged in industries.

(*c*) Through infant-welfare work, by promoting:

(1) The accurate registration of all births and measures for adequate care of babies in homes, welfare stations, and day nurseries.

(2) Instruction of mothers by visiting nurses. The enforcement of prophylactic measures to prevent blindness in the now-born.

(3) Safeguarding of milk supplies and establishment of pasteurization plants.

(*d*) Through supervision of children of preschool age, by promoting:

(1) The organization of divisions of child hygiene in state and local health departments.

(2) Instruction by visiting nurses in general, personal, and home hygiene, and inspection for physical defects and the control of communicable diseases.

(3) The establishment of clinics for sick children.

(*e*) Through supervision of children attending school, by promoting:

(1) The supervision of the home and school environment, including sanitation of school grounds and school buildings.

(2) The maintenance of health supervision of school children by school nurses and school physicians to detect and correct physical and mental defects and to control communicable diseases.

(3) Mental examinations of schoolchildren to determine and prescribe suitable treatment and training for children who fail in class work.

4. Water supplies. National development of safe water supplies:

(*a*) By extending surveys already made by the Public Health Service of water supplies, checked by laboratory analyses when necessary, to be done by national, state, local, or university personnel and laboratories.

(*b*) Introduction and extension of methods of water purification according to results of surveys and analyses.

(*c*) Stimulation of communities to obtain safe water through national, state and local representatives and volunteer organizations.

5. Milk supplies. National development of safe milk supplies through:

(*a*) Universal pasteurization (including adequate municipal supervision).

(*b*) Adequate inspection of production and distribution of milk and milk products.

(*c*) Stimulation of communities to obtain safe milk through national, state and local representatives and volunteer organizations.

6. Sewage disposal. Proper sewage disposal will control intestinal diseases, such as typhoid fever, dysentery, diarrhea and hookworm. These diseases now cause over 60,000 deaths annually. National development of safe methods through:

(*a*) Extension of water carriage sewerage systems wherever practicable.

(*b*) Elimination within municipal limits of cesspools and privies.

(*c*) In rural communities the installation of sanitary privies.

(*d*) The establishment of minimum standards of permissible pollution of streams, lakes and rivers used for water supplies.

(*e*) Stimulation of communities to obtain safe sewage disposal through national, state and local representatives and volunteer organizations.

7. Malaria. National development of measures for the control of malaria and malaria-bearing mosquitoes in industrially, agriculturally and economically important areas of the United States:

(*a*) By the further dissemination of the knowledge of methods for its control (elimination of malaria-mosquito breeding places through drainage, oiling, ditching, and the like) now being demonstrated by the Public Health Service.

(*b*) By the extension throughout the country of surveys of certain areas as to the prevalence of malaria and malaria-bearing mosquitoes.

(*c*) By increasing the corps of experts of the Public Health Service engaged in malaria prevention and by the utilization of other national agencies wherever practicable to advise the communities as to the methods for best handling their problems in malaria.

(*d*) Additional appropriations for the reclamation of large areas from malaria through proper drainage. Funds for such projects should be supplied on a 50-50 basis by federal and state governments. This plan is especially applicable to the control of malaria in communities where malaria conditions interfere with their economic development.

8. Venereal diseases:

(*a*) Medical measures:

(1) Establishment of clinics, dispensaries and hospitals.

(2) Epidemiologic studies.

(3) Free diagnosis.

(4) Examination for release as noninfective.

(5) Free distribution of arsphenamin.

(6) Control of carriers through detention and commitment.

(*b*) Educational measures:

(1) Proper reporting of cases.

(2) Standardization of pamphlets, exhibits, placards and lectures.

(3) Cooperation with national, state and local authorities, and volunteer associations.

(4) Cooperative work in industrial plants, shipyards and railway employees' organizations.

(5) Cooperation with druggists' organizations to secure their voluntary aid in the control of patent nostrums for the treatment of venereal diseases.

9. Tuberculosis:

(*a*) Stringent provisions for the proper reporting of cases of tuberculosis.

(*b*) Adequate instruction of families and patients, especially in families where there is an advanced case.

(*c*) Hospitalization of cases wherever practicable, either through city institutions or by arrangements with state or district tuberculosis hospitals.

(*d*) Cooperation with national societies and agencies having for their object the prevention of tuberculosis or the improvement of economic conditions.

(*e*) Improvement of industrial conditions predisposing to tuberculosis, such as "dusty occupations."

10. Railway sanitation:

(*a*) Consolidation under supervision of the Public Health Service of railway sanitation.

(*b*) Protection of railway employees by adequate health measures (e. g., protection against smallpox and typhoid fever by vaccination and inoculation; supervision of food, water and milk supplies consumed by employees; elimination of health hazards in shops and other work places; supervision of sanitary housing facilities; sanitation of railway communities).

(*c*) Protection of the public by:

(1) Sanitary supervision of water, milk and food supplies furnished by railway administration.

(2) Sanitary supervision of employees engaged in handling water and food supplies so furnished.

(3) Sanitation of stations, terminals, rights of way, with special reference to sewage disposal, malaria-mosquito eradication, and screening against insect-bearing disease.

(4) Prevention of the spread of communicable diseases through common carriers.

(5) Improvement and regulation of ventilation of passenger coaches and railway tunnels.

11. Municipal sanitation:

(*a*) Development and demonstration of the principle of employing full-time health officers by all municipalities.

(*b*) Enactment and enforcement of ordinances for adequate disease reporting.

(*c*) Provision for safe water, food and milk supplies and sewage disposal.

(*d*) Enactment and enforcement of special regulations for the improvement of conditions causing tuberculosis.

(*e*) Establishment of community health centers.

(*f*) Municipal campaign for the control of venereal diseases through venereal-disease reporting; clinics for the treatment and control of carriers, and free treatment for all cases.

(*g*) Control of malaria and malaria-bearing mosquitoes in malarious regions.

(*h*) Enactment of proper building ordinances and provision for sanitary supervision of housing, especially in industrial centers, including improvements in transportation, so as to permit redistribution of persons living in overcrowded communities.

(*i*) Adequate systems of medical supervision of schools.

(*j*) Reduction of infant mortality by proper organization for prenatal care, bed space in maternity hospitals, and infant-welfare stations, visiting nurses, and milk and ice stations.

(*k*) Stimulation of municipalities to realize their own responsibilities for health, and the part played by adequate health protection in the happiness and material prosperity of the community.

12. Health standards:

(*a*) Communicable diseases. Promulgation by the Public Health Service of minimum standards for the control of communicable diseases.

NOTE.—The service has published on this subject a report of committee of the American Public Health Association, on which the service was represented. This report should be reviewed and amended by a board of service officers. It should then be formally approved by the conference of state and territorial health officers with the Public Health Service, and be promulgated by the Public Health Service as federal standards.

(*b*) Industrial hygiene. Standards of industrial hygiene and sanitation of places of employment should be prepared by the service in cooperation with the Department of Labor.

(*c*) Sewage and excreta disposal. Minimum standards should be promulgated on the following:

(1) Water-carriage sewerage systems.

(2) Sanitary privies.

(*d*) Standard specifications for safe water and water purification.

(*e*) Community sanitation. Preparation of standard methods for scoring the sanitary condition of communities.

(*f*) Preparation of additional standards for the manufacture and the purity and potency of biologic products and for arsphenamin.

(*g*) Preparation of standards for illuminating, heating and ventilating public buildings and schools.

13. Health education. To increase the knowledge of the general public on means relating to disease prevention and personal hygiene:

(*a*) By the employment of medical sanitarians, having special experience in educational methods and their use, in cooperation with Red Cross national and state organizations, state and municipal health departments, state industrial commissions, and state and national health associations.

NOTE.—The prevention of the following conditions and diseases will be the special objects of health education: excessive infant mortality, occupational diseases (see section on industrial hygiene), malaria, typhoid fever, hookworm, venereal diseases, pellagra, tuberculosis, pneumonia, cerebrospinal meningitis, and personal hygiene.

(*b*) By advocating and assisting in the securing of full-time state, district and local health officers.

(*c*) By stimulation of states and municipalities to the acceptance of their full responsibility for public health conditions and the support of health activities by adequate appropriations.

(*d*) By the detail of service officers to state health organizations and, when necessary, to city organizations, particularly in communities presenting special health problems.

14. Collection of morbidity reports. Extension of disease reporting to be accomplished through the collection of adequate reports of disease prevalence:

(*a*) By the extension of the present system of collaborating epidemiologists.

(*b*) For the industrial group of the population, through the appointment of industrial surgeons and record clerks in various industrial establishments, such industrial surgeons to be appointed by the Public Health Service, at a nominal salary, so as to place them under the direction and control of the service, and the remainder of the salary to be paid by the industrial establishments to which they are attached. In addition to reporting disease, these surgeons will act as medical and surgical officers and sanitarians. They will also report on community sanitation.

15. Organization and training for duty in emergency of the Reserve of the Public Health Service:

(*a*) By the establishment of training schools in public health work in connection with stations of the Public Health Service and leading universities at which members of the reserve may receive intensive training for short periods at stated intervals.

(*b*) Ordering members of the reserve to active duty to participate in important field work of the Public Health Service.

In order to carry this program into effect the following additional personnel of the Public Health Service is needed:

Industrial hygiene	120
Rural hygiene	200
Prevention of diseases of infancy and childhood	100
Interstate water supplies	20
Milk supplies	15
Malaria:	
Sanitary engineers	20
Epidemiologists	10
Venereal diseases:	
Control in states	88
Control in clinics	240
Tuberculosis investigations	20
Health education	10
Total	843

Medicolegal

Evidence of Illegally Prescribing Liquor

(*State v. Raub (Wash.), 173 Pac. R. 1094*)

The Supreme Court of Washington, in affirming a conviction of the defendant of having prescribed intoxicating liquor without good reason to believe that the patient was actually sick or that the intoxicant was required for medicine, says that the trial judge permitted the introduction of testimony showing the giving of some fifty-six prescriptions other than those given to the party named in the information, and at about the same time. The defendant had issued to his patient five prescriptions between Aug. 26, 1917, and Sept. 11, 1917, each calling for one quart of whisky. On each prescription the patient was directed to take one ounce of the remedy in water three times a day. As these prescriptions obviously called for a greater quantity of liquor than was necessary to meet the needs of the patient if "taken as directed," the good faith of the physician, the issue in this class of cases, was clearly tendered by the state, and to further sustain the issue the other prescriptions were offered. The rule is that, in cases of this character, such evidence is competent.

It was urged that this procedure was violative of the rule that proof of crimes independent and in no way related to the crime charged cannot be established to prove a specific offense. It would be so if the crime charged rested alone in the doing of the act charged. But the gravamen or material part of the offense is not in the doing of the deed, but in the faith in which it was done. The rule seems to have grown out of the necessities of the statute, for the act itself is presumptively a lawful act sanctioned by statute. It is rendered unlawful when, and only when, the writer of the prescription abuses the confidence that is reposed in him and by the injection of bad faith thwarts the police power of the state. From the nature of things, good or bad faith can be proved only by resort to circumstances and side lights. If it were otherwise—if the mere giving of a prescription or a number of prescriptions by a licensed physician would bar further inquiry—the law would be emasculated of its purpose. It is not going beyond the range of judicial vision to say that liquor has not always been regarded as a cure-all or touchstone of health, but that it has grown in popular favor as a remedy as the chance of procuring it has grown remote;

and, although a physician who prescribes it may be imposed on at times, a general dispensation of the remedy at or about the time charged is sufficient to put him to the defense of his good intention before a jury of his countrymen.

It was complained that no testimony was offered to show the physical condition of the patient, or that she did not in fact need the remedy; the charge being that the defendant prescribed liquor "without good reason to believe that she was at the time actually sick or that said intoxicant was required for medicine." But the court thinks the showing that the defendant had theretofore prescribed 4 quarts of liquor, which would have met the "directions" for a time far beyond the time when the prescription on which the charge was made (September 11) was written, was a sufficient circumstance to go to the jury, and, being unmet in any way, was enough to sustain the verdict.

Duty of Physicians Riding Together in Automobile

(Hurt v. Yazoo & M. V. R. Co.; Lewis v. Same (Tenn.), 205 S. W. R. 437)

The Supreme Court of Tennessee had here two actions which were tried together. One was by Hurt, as administrator, to recover damages for the death of a Dr. Nelson. The other was by a Dr. Lewis to recover damages for personal injuries to himself and for the destruction of an automobile. Dr. Lewis and Dr. Nelson were partners in the practice of medicine. Dr. Nelson had a patient a short distance out of the city, and he and Dr. Lewis visited the patient for the purpose of performing a surgical operation. Dr. Nelson performed the operation, but Dr. Lewis assisted him, and carried him to the patient's residence in his own automobile as a guest and without charge. As they were returning from the operation and Dr. Lewis was giving particular attention to the automobile because the road at a "blind crossing" of the defendant's tracks was in bad repair, both at about the same instant saw a train approaching, and, on account of their closeness to the track, Dr. Lewis deeming it best to try to rush across it, the engine struck the automobile about the rear wheel. The trial judge submitted the cases to a jury, which returned a verdict for $30,000 for Hurt, administrator; and for $2,000 for Dr. Lewis; but the judge afterward directed a verdict for the defendant in each case, stating that he was not satisfied that the plaintiffs were entitled to recover under the law, or that they had sustained their cases by a preponderance of the proof.

The supreme court, in reversing the cases, and remanding them for trial, says it does not think that the defendant's contention was well made that Drs. Lewis and Nelson were guilty of such contributory negligence as would bar their right of recovery as a matter of law. Again, the court says that the two physicians were jointly interested in the success of the operation, and in that sense were on a joint enterprise. The interest they had in the journey would doubtless continue until they had returned to their offices, or until they had declared the journey at an end by act or word. The question of imputable negligence did not really arise in the case. The proof showed that Dr. Nelson saw the train at the same instant Dr. Lewis saw it, and gave the alarm. His negligence, if any, was as great as or greater than that of Dr. Lewis, and therefore there was no basis for the contention that Dr. Lewis' negligence was imputable to Dr. Nelson.

The court thinks Dr. Nelson was under the duty of exercising due care for his own safety, notwithstanding Dr. Lewis was driving the automobile. This would be true whether he was a guest of Dr. Lewis, or whether they were engaged on a joint enterprise in which they were both interested. Dr. Lewis was not a common carrier, and was in the exercise of a friendly act in which he had an interest in transporting Dr. Nelson in his automobile. The guest is under the same duty to look out for his own safety as he would be if traveling alone. He cannot close his eyes to obvious danger and rely exclusively on the driver of the automobile to protect him. It is a question of ordinary care and proximate cause. The facts that the plaintiffs were riding in an automobile, and that Dr. Lewis was the guest of Dr. Nelson, could not change their duty to exercise due care for their own safety. This duty was personal to each one.

Care Required of Hospital Conducted for Profit

(Tulsa Hospital Association v. Juby (Okla.), 175 Pac. R. 519)

The Supreme Court of Oklahoma, in affirming a judgment for damages against the defendant association, holds that a hospital that is conducted for private gain receives patients under an implied obligation that it will exercise ordinary care and attention for their safety, and such degree of care and attention should be in proportion to the physical and mental ailments of the patient; and the question whether or not such requirements have been met presents an issue of fact to be determined by the jury. In this case the plaintiff, who had been taken to the defendant's hospital for the purpose of being operated on for appendicitis, maintained that a subsequent attack of pneumonia was due to the bedding on her bed and to her nightgown being wet by a leaking roof, and, for two hours, only the blankets being changed. The court says that it is unable to agree with the contention that there was not shown that degree of negligence on the part of the defendant in permitting water to leak through its roof as would entitle the plaintiff to recover damages for injury sustained thereby. The plaintiff was received into the hospital with an implied understanding and agreement that she would be furnished with a suitable room for a person in her condition. It was incumbent on the defendant to exercise ordinary care in furnishing the plaintiff a suitable and safe place, and to use ordinary care in furnishing the plaintiff a competent nurse, and to use ordinary care in looking after and caring for the plaintiff while she was in its care and custody. These questions presented an issue of fact which was rightly submitted to the jury for determination. From a careful reading of the record the court is convinced that, if the verdict had been based solely on the negligence of the defendant in permitting the plaintiff to remain in her bed for a period of two hours after ascertaining that the roof was leaking and the bed was wet, a verdict on that issue alone would be warranted by the evidence. Furthermore, it appeared that when the plaintiff was placed in the care and custody of the defendant, and was paying the ordinary prices charged by such institution, the defendant did not place a skilled and trained nurse over the plaintiff, but, on the contrary, placed a pupil nurse in the institution, whose training did not cover more than a period of six months, in charge of her, and if the evidence of the plaintiff was to be believed, this pupil nurse permitted her to lie on this wet bed for a period of more than two hours before any effort was made to change her clothes or the sheets on the bed. If this state of facts be true, this conduct alone would constitute such negligence that a cause of action might be predicated thereon, and a judgment recovered. A rehearing was denied.

Society Proceedings

COMING MEETINGS

American Medical Association, Atlantic City, June 9-13.

Alabama State Medical Association, Mobile, April 15.
American Association of Anatomists, Pittsburgh, April 17-19.
American Physiological Society, Baltimore, April 24-26.
Arkansas Medical Society, Little Rock, May 20-22.
Assn. of American Peroral Endoscopists, Brooklyn, N. Y., June 5.
Connecticut State Medical Society, Bridgeport, May 21-22.
Florida Medical Association, Miami, May 20-22.
Georgia State Medical Association, Atlanta, April 17.
Illinois State Medical Society, Peoria, May 20-22.
Iowa State Medical Society, Des Moines, May 7-9.
Kansas Medical Society, Ottawa, May 7-8.
Louisiana State Medical Society, Shreveport, April 8-10.
Maryland, Medical and Chir. Faculty of, Baltimore, April 22-24.
Michigan State Medical Society, Detroit, May 21-22.
Mississippi State Medical Association, Hattiesburg, May 13-14.
Missouri State Medical Association, Excelsior Spgs., May 26-28.
Nebraska State Medical Association, Lincoln, May 19-21.
New Hampshire Medical Society, Concord, May 14-15.
New York State Medical Society, Syracuse, May 6.
North Carolina State Medical Society, Pinehurst, April 15.
Ohio State Medical Association, Columbus, May 6-8.
Oklahoma State Medical Society, Muskogee, May 20-22.
South Carolina Medical Association, Florence, April 15-16.
Texas State Medical Association, Waco, May 13-15.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Medical Sciences, Philadelphia

March, 1919, **152**, No. 3

*Cutaneous Aspects of Tuberculosis: II. Diagnostic and Clinical Relations of Certain Tuberculosis. J. H. Stokes, Rochester, Minn.—p. 313.
*Case of Acute Bichlorid of Mercury Poisoning Treated Successfully by Newer Methods. J. Rosenbloom, Pittsburgh.—p. 348.
Case of Bulimia; Causal Treatment of Some Functional Diseases. G. Dock, St. Louis.—p. 356.
*Migraine. M. P. S. Rupert and E. E. Wilson, Philadelphia.—p. 361.
Two Cases of Gaucher's Disease in Adults. F. S. Mandlebaum, New York City.—p. 366.
Standardization of Methods in Cases of Prostatic Obstruction. W. C. Quinby, Boston.—p. 390.
*Nervous Symptoms in Pernicious Anemia. H. W. Woltmann, Rochester, Minn.—p. 400.
Sensitization and Treatment of Bronchial Asthmatics with Pollens. I. C. Walker, Boston.—p. 409.

Cutaneous Aspects of Tuberculosis.—The material used in Stokes' study consisted of thirty cases of the so-called papulonecrotic tuberculid of erythema induratum, and of associated conditions constituting, according to the most widely accepted explanation, the allergic response of a hypersensitized skin to emboli of tubercle bacilli from a tuberculous focus elsewhere in the body. Association with tuberculosis in this series was evidenced by a family history in one fourth of the cases, incontestible objective signs in more than half (57 per cent.), and presumptive signs of the disease in 70 per cent. One third of the patients had roentgenographic signs of pulmonary tuberculosis; an equal number had suggestive or positive physical signs of lung involvement. The importance of lymphatic involvement is illustrated by the fact that two-thirds of them had a tuberculous lymphadenitis.

The type and location of the focus of tuberculosis do not seem to influence the tuberculid beyond the marked association with glandular involvement. On the other hand, the influence of vascular abnormalities and chronic passive congestion in the extremities is very apparent. Ninety-six per cent. of the lesions involved the extremities. Lesions appeared in the ear in 13 per cent. Slight fever at onset, loss of weight in 40 per cent., amenorrhea in 43 per cent. of the women, moderate leukopenia, slight but occasionally severe anemia, and vernal periodicity are the significant signs. An onset and course marked by rheumatic symptoms is very common (46 per cent.) and often misinterpreted. The recognition of the focus of tuberculosis must depend largely on objective evidence. There is a notable absence of cough, sweats and hemoptysis. Florid, seemingly robust types of patients are not infrequently subjects of tuberculids.

Evidence of the importance of a septic focus and collateral types of infections appears from the history of tonsillitis in 39 per cent., "rheumatism" in 46 per cent., pneumonia in 26 per cent., grip in 54 per cent., and pleurisy in 18 per cent. These conditions seemed frequently to stand in direct predisposing or exciting relation to the tuberculid. A total of 70 per cent. had symptoms and findings suggesting the presence of a septic focus, and 62 per cent. had had significant respiratory infections excluding pleurisy. While no direct relation of the tuberculid to the clinical condition of the tonsils could be established, 50 per cent. of the patients had markedly septic tonsils, the remainder were passable and none were normal. Examination of the teeth by roentgen ray in a limited number of the latter cases demonstrated the presence of septic foci in 45 per cent. of nine patients. Removal of the tonsils in seven cases failed to prevent the outbreak of a tuberculid or modify its course, and complete extirpation of all recognizable septic foci in two cases, without removing or treating the tuberculous focus, was also unavailing.

Treatment of Bichlorid of Mercury Poisoning.—The treatment advocated by Rosenbloom is as follows: Administer the whites of three eggs beaten up in a quart of milk and then empty the stomach by siphonage. Give 300 c.c. of fresh calcium sulphid solution, containing 1 grain to 1 ounce of water by mouth. Wash out the stomach with fresh calcium sulphid solution, 1 grain to 1 ounce of water. Administer in powder or tablet 0.36 gm. of sodium phosphite and 0.24 gm. of sodium acetate. If this is not available give the following: Sodium hypophosphite, 1 gm.; water, 10 mils; hydrogen peroxid, 5 mils. Use ten times as much of the hypophosphite as poison taken. Give a copious lavage of the stomach with the above antidote diluted twenty times. Give the above undiluted antidote every eight hours for two days. Pour through the stomach tube after the above lavage a solution of 3 ounces of sodium sulphate and 6 ounces of water containing 5 grains of calcium sulphid. Let these solutions remain in the stomach. Give intravenously after withdrawing 600 c.c. of blood, 800 c.c. of Fisher's solution or bicarbonate-glucose solution. Wash out the stomach morning and night, giving by the mouth after each washing, 5 grains of calcium sulphid dissolved in 3 ounces of water. Continue this lavage until the stomach washings are free from mercury when tested by Elliott's method and until the urine is free from mercury. Give high colon irrigations of warm water morning and night, using 8 gallons of water for each treatment. Give a hot pack twice daily. Give 8 ounces of milk every second hour. Give every second hour 8 ounces of the following solution, by mouth, alternating with the milk: Potassium bitartrate, sodium citrate and sucrose, each 1 dram; lactose, 4 drams; lemon juice, 1 ounce, and boiled water, 16 ounces. Force the patient to drink large quantities of alkaline waters. Give a low fat and low protein and high carbohydrate diet for four weeks. Avoid salt food, as it increases the absorption of the mercury. Give by continuous proctoclysis a solution containing 1 dram potassium acetate, 4 drams glucose and 3 drams sodium bicarbonate to the pint. Keep the urine alkaline. Continue treatment until recovery, usually a period of three weeks.

Migraine.—Rupert and Wilson found on examination that each person having frequent attacks of migraine shows some abnormality of the stool, usually putrefaction, with an alternation of blood-pressure, and these are usually accompanied by delay of kidney function with some disturbance of nitrogen output. Further, this variation of blood-pressure between attacks corresponds with the findings in the stool. For instance, a persistently low blood-pressure reading is apt to be associated with an excessively putrefactive movement, and as the stool condition is corrected, the attacks are less in frequency and in severity, and some cases show improvement in pressure between attacks. The authors are searching for toxin in the putrefactive stool.

Nervous Symptoms in Pernicious Anemia.—Of the 150 patients examined by Woltmann, no less than 80.6 per cent. presented indisputable evidence of the destruction of nervous parenchyma. Approximately 12.7 per cent. of the patients came for the express purpose of seeking relief from symptoms directly attributable to involvement of the nervous system. Chief among these were the paresthesias, especially numbness and tingling of the hands and feet, which were present in about 80 per cent. of all cases, regardless of whether or not involvement of the nervous system could be demonstrated objectively. Occasionally a patient complains of a girdle pain (2.8 per cent.), or the sensation of a tight band drawn around the knees (1.7 per cent.). A number presented themselves for examination because of inability to control the arms and legs properly. In the motor field, cramping of the calves occasionally proved to be the source of great discomfort.

In relation to the cranial nerves, dimunition in the sense of smell, taste and hearing was noted. In 1.4 per cent. of the cases the appearance of nervous symptoms antedated the onset of the anemia, the symptoms that preceded being usually the paresthesias. The duration of the anemia also showed no definite relationship to the time of onset in the nervous symptoms, though in the cases examined the mean duration of the anemia was 2.2 years and the mean onset of the nervous symptoms ten and a half months later. The type of lesion *par excellence* of the nervous system, as evidenced clinically, is a subacute combined degeneration of the cord,

regardless of whether this begins in the posterior or the lateral columns or in both simultaneously, though the columns of Gall and Burdock are in the majority of cases first and most extensively involved. Multiple neuritis could be demonstrated in addition to the spinal cord lesion in 4.9 per cent. of the cases.

Annals of Otology, Rhinology and Laryngology, St Louis

December, 1918, **27**, No. 4

Multiple Osteoma of Nasal Accessory Sinuses; Case Complicated by Syphilis; Operation; Necropsy. W. L. Culbert, New York City.—p. 1203.
Case of Plastic Repair of Ala of Nose by Means of Doubly Epithelialized Flap from Face. R. H. Ivy, Washington.—p. 1225.
Original Methods of Treatment of Laryngeal Stenosis. S. Iglauer, Cincinnati.—p. 1233.
Case of Osteoma of Frontal Sinus of Large Size: Operation; Recovery. J. F. Barnhill, Indianapolis.—p. 1239.
Case of Meningitis Following Operation on Middle Turbinate; Old Perforation of Cribriform Plate of Ethmoid. T. J. Harris, New York City.—p. 1241.
Treatment of Progressive Deafness Following Chronic Hyperplastic Otitis Media. F. P. Emerson, Boston.—p. 1250.
Esophageal Obstruction Due to Accessory Thyroid. F. E. Hopkins, Springfield, Mass.—p. 1258.
Local Anesthesia in Mastoid Operations. H. B. Orton, M. C.—p. 1261.
Diseased Faucial Tonsils: Their Toxic, Infectious, and Reflex Effects. J. L. Davis, Philadelphia.—p. 1265.
Rhinoplasty. E. J. Moure, Bordeaux, France.—p. 1273.
Wounds of Face and Maxillary Bones. E. J. Moure, Bordeaux.—p. 1282.
Treatment of Most Common Mutilations of Nasal Tip Structures (Auvent Nasal), Caused by War Traumatism. H. Caboche, France.—p. 1298.
Rhinoplasty and Nasal Prosthesis. Pont, France.—p. 1320.
Absolute Repose of Jaws as Treatment for Traumatic Parotid Salivary Fistulae. P. Pietri, Kiew.—p. 1333.
Local Anesthesia: Technic in Surgical Interventions on Frontal and Maxillary Sinuses. G. Canuyt, Bordeaux, and J. Rozier, Pau.—p. 1348.
Salivary Fistulae. L. Dieulafé, France.—p. 1372.

Archives of Internal Medicine, Chicago

March 15, 1919, **23**, No. 3

*Standardization of Antipneumococcus and Antimeningococcus Serums. A. B. Wadsworth, M. B. Kirkbride and R. Gilbert, Albany, N. Y.—p. 269.
*Clinical Study of Meningitis Based on Two Hundred and Fifteen Cases. W. J. Stone, Toledo, and R. C. P. Truitt, Baltimore.—p. 282.
*Plasmaphaeresis in Treatment of Chronic Nephritis and Uremia. J. P. O'Hare, H. H. Brittingham, and C. K. Drinker, Boston.—p. 304.
*Poliomyelitis, Clinically Atypical Because of Complicating Infection by Proteus-Like Bacillus. O. T. Schultz, Chicago, and A. M. Dannenberg, Philadelphia.—p. 309.
*Relative Frequency in Recruits With and Without Thyroid Enlargement of Certain Signs and Symptoms which Occur in Neurocirculatory Asthenia. T. Addis, and W. J. Kerr, San Francisco.—p. 316.
*Chemistry of Pernicious Anemia. M. Kahn, and J. Parsky, New York City.—p. 334.
Toxin Formation by Variety of B. Botulinus When Cultivated Aerobically Under Various Conditions. L. P. Shippen, Washington, D. C.—p. 346.
*Mechanism of Protective Action of Carbohydrate Diet in Phosphorus and Chloroform Poisoning. J. P. Simonds, Chicago.—p. 362.
*Experiences with Recent Epidemic of Meningococcic Meningitis Among Chinese Civil Population. P. K. Olitsky, New York City.—p. 380.
*Biochemical Studies of Pneumonic Exudates: Mechanism of Crisis in Pneumonia. C. Weiss, Philadelphia.—p. 395.

Standardization of Antipneumococcus and Antimeningococcus Serums.—The results of tests made on antimeningococcus serums produced by different laboratories, and the experience in formulating standard methods for the state are recorded by Wadsworth and his associates as the outcome of this work. Rules and regulations for the testing of the potency of antimeningococcus serum were drawn up. They bear on (1) the type of serum, (2) minimum standard of potency, (3) standard cultures, (4) standard suspensions, (5) method of testing the potency of the serum, (6) physical properties, (7) sterility tests, and (8) expiration date.

Clinical Study of Meningitis.—The important diagnostic features presented by a series of 191 patients with meningococcic meningitis and twenty-four patients with meningitis due to other organisms are analyzed by Stone and Truitt. In 191 cases the mortality was 28.8 per cent. Mixed infection occurred in thirteen instances with a mortality of 92.3 per cent. Meningitis due to other infection than meningococcus occurred in eleven instances with a mortality of 81.8 per cent. Ten out of 191 patients with meningococcus, or 5 per cent., gave a history of an earlier carrier state. Of these ten patients, eight recovered and two died. A definite history of earlier meningitis was given by two patients, one of whom recovered while the other resulted fatally.

Lumbar puncture was performed for diagnostic purposes as early as possible on all meningitis suspects. The usual amount of serum given intraspinally was from 30 to 35 c.c. twice daily during the first five or six days until the reports received from the laboratory showed two or more negative examinations. The average number of intraspinal treatments in 136 recovered patients was eleven; the average total amount of serum received by each was 305 c.c.; the average total drainage of spinal fluid was 571 c.c.

Combined intravenous and intraspinal therapy was resorted to in thirty-two patients. The mortality was 28.1 per cent. Three of the patients died within sixty hours after admission. In one of the fatal cases the patient received 730 c.c. of serum intravenously in eighteen injections, and 460 c.c. of serum intraspinally in twenty injections; in two other fatal cases the patients received 200 and 360 c.c., respectively, by vein and 1,080 and 1,015 c.c., respectively into the spinal canal. The mortality in this series of patients was almost identical with the mortality among 159 patients with meningococcic meningitis treated intraspinally (deaths, forty-six; mortality, 28.9 per cent.).

The point is made by the authors that in a patient still manifesting evidences of the disease, such as positive organisms or fever, in whom mechanically it becomes difficult to continue treatment by spine, the attempt should be made to give serum by vein. If patients have been given a number of intraspinal treatments and subsequently an intravenous injection is contemplated, extreme care in its administration is necessary to avoid serious symptoms of anaphylaxis. It has always proved wise to desensitize before giving the first intravenous injection, by a subcutaneous injection of 1 c.c. of serum. The intravenous injection should be given slowly, at the rate of 1 c.c. of warmed serum per minute for the first 10 or 15 c.c. . If anaphylactic symptoms occur the injection should be stopped and the attempt repeated later. Epinephrin chlorid, 1 c.c. of the 1:1,000 solution, by hypodermic injection, relieves the symptoms of anaphylaxis. Atropin, $\frac{1}{100}$ grain, by hypodermic injection is also useful. The serum if mixed, not shaken, with an equal volume of salt solution is less apt to clog the needle.

Plasmaphaeresis in Treatment of Nephritis and Uremia.—Bleeding, removing the plasma and returning the corpuscles after washing with Locke's solution is designated "plasmaphaeresis." In the course of experiments designed by O'Hare and others to disclose the toxic elements in citrated blood transfusions it became expedient to obtain data on removal and return of corpuscles from the same individual. In consequence of this need, the ordinary venesections in uremia patients, which would have been carried through without return of corpuscles, were made instances of plasmaphaeresis, and data were obtained on the possible beneficial effects of this measure. The blood was drawn into sodium citrate, centrifugalized and prepared for return; in no case was sodium citrate added before reinjection, nor was Ringer's solution employed. Seven or eight hundred c.c. of blood were withdrawn, centrifugalized, washed twice with freshly made, sterile, 0.85 per cent. sodium chlorid solution, and the corpuscles were returned made up to the original volume with salt solution. On completing this return, and without inserting another needle, 700 or 800 c.c. of blood were again withdrawn. The corpuscles thus removed were washed twice and reinjected. The patient never experienced a hemorrhage of more than 800 c.c., and he was subjected to no operation except venipuncture, as it should never be necessary to cut down on a vein in such cases.

So far as this procedure was carried out in the one case reported it did not arrest the march of uremia in any degree. The encouraging betterment noted early in the patient's stay in the hospital was no more than is often seen from rest and proper diet. Other patients on whom the maneuver

was used have been of similar type and have received no benefit from it or from blood transfusion. Plasmaphaeresis was carried out eighteen times in eight different cases of chronic nephritis and uremia without definite benefit to the patients. It is suggested that the maneuver can have clinical value in no cases save those of acute suppression of urine where it is a question of tiding over a brief period.

Atypical Poliomyelitis.—A case of poliomyelitis, contracted by a soldier in civil life before his departure for camp, is described by Schultz and Dannenberg. The earlier clinical course was that of an acute poliomyelitis involving the lumbar region cord. Xanthochromia and spontaneous coagulation of the spinal fluid were present, due to an old subdural hemorrhage which was the result of an injury three months before admission. The later course was complicated by infection of the urinary tract and by generalized infection, the result of paralysis of the bladder caused by the poliomyelitis. The organism which caused the secondary infection, while not a typical *B. proteus*, is apparently a member of the proteus group.

Thyroid Enlargement and Neurocirculatory Asthenia.—The object of the survey made by Addis and Kerr was to find whether those signs and symptoms which occur in neurocirculatory asthenia, and which may also be present in toxic goiter, were more commonly seen in recruits with thyroid enlargement than in those who had no thyroid enlargement. The findings were negative.

Chemistry of Pernicious Anemia.—A study of the chemistry of three cases of pernicious anemia is presented by Kahn and Barsky. The blood analysis showed a lessened specific gravity of the serum, reduction of the protein content, and increase in the ash and lime content, and a normal fat, cholesterol and glucose percentage. There was complete anacidity present in the stomach, an increased residuum, and absence of pepsin, resembling the gastric picture present in cases of carcinoma ventriculi. The Wolff-Junghans test was negative. Intestinal digestion was disturbed. The fecal bulk was much increased, and the nitrogen lost in the feces was above normal in amount. The fat in the feces was normal. Intestinal putrefaction, as evidenced by increased ethereal sulphate output, was present. There was a state of suboxidation—the neutral sulphur fraction was increased. The pancreas functionated normally, as evidenced by enzyme examination of duodenal contents and feces. There was a deficiency in the hepatic detoxication function as shown by the sulphoconjugation test. The glycogenic and ureogenic functions of the liver were normal. The excessive hemolysis of pernicious anemia was attended by both a pleochromia and urobilinocholia. In this regard Schneider's experiments are corroborated. There was an increased elimination of oxyproteic acid nitrogen in the urine in cases of pernicious anemia; the other urinary nitrogen fractions being normal. The renal function was normal, as evidenced by the phenolsulphonephthalein test and the blood nitrogen partition. The creatinin in the blood was increased. Acidosis was present in the cases examined, as determined by the carbon dioxid combining power of the blood plasma, the H ion concentration of the blood, and the carbon dioxid of the alveolar air.

Use of Sugar in Phosphorus and Chloroform Poisoning.—The facts presented by Simonds are, he believes, sufficiently well substantiated to justify the opinion that the administration of sugar will prove to be an important therapeutic measure in phosphorus and chloroform poisoning in humans, in acute yellow atrophy of the liver, and, possibly, in eclampsia.

Meningococcic Meningitis.—In four of ten moribund cases of epidemic meningitis seen by Olitsky, the meningococcus was found circulating in the blood. This finding, he believes, emphasizes the need of intravenous combined with intraspinal methods of treatment. Serums having a low agglutinin content were therapeutically ineffective. About 95 per cent. of the patients were infected with one type, the parameningococcus; the remainder with the irregular para type. In a series of prisoners, who lived under hygienic conditions, 24.6 per cent. were found to be carriers. Of these, 50 per cent. yielded irregular or inagglutinable types and 34.3 per cent. the normal type, and only one person the para type. Although the jail is within the epidemic area, not a single case of meningitis developed therein. These and other facts already stated have led to the conclusion that dense overcrowding of population and the presence of a pathogenic type of meningococcus, rather than the actual numbers of healthy carriers of various types of the organism, are the causes of the great spread of this epidemic.

Analysis of Pneumonic Exudates.—Biochemical studies of pneumonic exudates obtained from human lungs in the stage of gray hepatization were conducted by Weiss by the method of anaphylactic sensitization and intoxication of guinea-pigs with various proteins derived from normal and pneumonic lungs, exudates, serums, etc. The following observations were made: Pneumonic exudates, contain at least two toxic proteins: (1) a specific sensitizing protein apparently identical with the pneumotoxin which is liberated on the dissolution of virulent pneumococci, and (2) an extremely toxic, pyrogenic albumose. There are also present normal serum proteins: serum albumin and serum globulin, leukocytes and fibrin. Neither undigested pneumococcic protein nor albumin derived from the lung tissue, possessing sensitizing powers, are demonstrable. The globulin fraction of human pneumonic exudate is nontoxic and identical with similar normal globulin. The albumin fraction of pneumonic exudate is toxic and possesses marked specificity. This is ascribed to the digestive action of the enzymes of the exudate. The albumose fraction is far more toxic. Dyspnea, convulsions and death follow the intraperitoneal injection into white rats of doses of one 1 gm. per kilogram. Intrathoracic injection into rabbits of doses of 0.02 gm. per kilogram produces a rise in temperature, dyspnea, a hemorrhagic extravasation into the alveoli of the lung and an acute diffuse nephritis. On repeated intraperitoneal injections of this albumose into rats, a tolerance to it can be established. Large amounts of ether-soluble, nontoxic, hemolysis-inhibiting substances were extracted from pneumonic lungs. These are assumed to have the power of neutralizing the hemolytic activity of the pneumotoxin in vivo.

The formation of the exudate in pneumonia is considered by Weiss to be in part due to an increased permeability of the endothelial cells of the lung for various normal serum albumins, globulins, fibrinogen and enzymes as the result of the injury exerted by the pneumotoxin on their cement substance. The toxin is also regarded as a lymphagogue. It hinders the autolysis of the exudate and the favorable action of antipneumococcus immune bodies and thus produces toxic autolysis inhibiting, pyrogenic albumoses. With the development of excess amounts of specific antibodies, of bactericidal and phagocytic substances, and of a tolerance to the toxic albumoses, the deleterious influences of the toxins and albumoses are neutralized. Autolysis of influences of the toxin is now unhindered and the products are nontoxic aminoacids. The equilibrium of this system being governed by the laws of mass action, the change from febrile toxemia to the afebrile atoxic state is necessarily an abrupt one—crisis.

Boston Medical and Surgical Journal

March 20, 1919, **180**, No. 12

*Influenza Epidemic at Camp MacArthur. L. S. Medalia, Boston. —p. 323.
Pneumonia and Empyema. H. Gray, Camp Devens, Mass. To be continued.—p. 330.
*Unique Case of Foreign Bodies in Stomach. A. C. Callister, Boston. —p. 334.
Infantile Scurvy. J. Comby, Paris, France.—p. 336.

Influenza at Camp MacArthur.—In the epidemic in this camp the influenza bacillus was found to be the predominating organism. Out of 2,279 sputums examined by Medalia and others, 76.8 per cent. were found positive to this organism. The pneumococcus was the most important associated organism, being found in 53 per cent. of the total sputums examined. The examination of contacts for influenza carriers as a means of prevention, though possible, was found impracticable. The type determination on 440 cases of influenzal pneumonia conformed to the following: Type I, 0.23 per cent.; Type IIa, 3.4 per cent.; Type II, 1.8 per cent.; Type III, 1.1

per cent., and Type IV, 85.8 per cent.; undetermined, being bile insoluble, 8.6 per cent. The *B. influenzae* was found in 54 per cent. of the bronchopneumonia sputums that were typed. Blood cultures made in 233 cases showed thirty-four, or 14.6 per cent., positive. Thirty-one of the thirty-four positive, or 94 per cent., were found to be pneumococcus. *B. influenzae* was found in two cases, or 5.8 per cent. (one mixed with pneumococcus). The high percentage of positive *B. influenzae* found in the bronchopneumonia cases that came to necropsy, in the lungs, pleural cavities, the heart, and spleen culturally, and in the stained tissue of the lungs and spleen, is accepted by Medalia as being further evidence of the causative relation of *B. influenzae* to the bronchopneumonia, and as demonstrating the frequency of the organism in the circulation. The sixty-one consecutive necropsies showed 92 per cent. to be bronchopneumonia; 8 per cent. lobar. Empyema (bloody serofibrinopurulent) was a constant finding, being present in over 75 per cent. of the cases.

Foreign Bodies in Stomach.—One hundred and forty-one foreign bodies were "fished" out of the stomach in Callister's case, including 128 sections of bed spring, measuring 8 cm. in length and 1 cm. in diameter on either end, nine copper pennies, three peach pits, and a piece of tin foil, the total weighing 2½ pounds.

Bulletin of Johns Hopkins Hospital, Baltimore

March, 1919, **30**, No. 3371.

Antituberculosis Measures. A. K. Krause.—p. 49.
*Insusceptibility of Monkeys to Inoculation with Blood from Measles Patients. A. W. Sellards and J. A. Wentworth, Camp Devens, Mass.—p. 57.
*Production of Tetany by Intravenous Infusion of Sodium Bicarbonate: Report of Adult Case. G. A. Harrop, Baltimore.—p. 62.
*Changes in Blood Immediately Following Transfusion. J. G. Huck, Baltimore.—p. 63.
Elizabeth Fry—Quaker Reformer. H. M. Thomas, Baltimore.—p. 72.

Insusceptibility of Monkeys to Inoculation from Measles Patients.—Three monkeys were inoculated by Sellards and Wentworth with the blood of measles patients taken early in the course of the disease from moderately severe cases. These animals remained entirely free from any symptoms that were either diagnostic or even suggestive of measles. Two of these animals that were injected a second time failed to develop any symptoms. After an incubation period of eleven days blood was taken from one of these monkeys and injected into a human volunteer. No symptoms developed.

Production of Tetany by Intravenous Infusion of Sodium Bicarbonate.—A woman swallowed bichlorid of mercury with suicidal intent. Because of reduction in plasma carbonate capacity she was given 500 c.c. of a 5 per cent. sodium bicarbonate solution intravenously. No untoward effect was noted and she said that she felt more comfortable afterward. Twenty-four hours later, another intravenous infusion was given of 700 c.c. of a 5 per cent. solution of sodium bicarbonate, prepared as before. This made in all 60 grams of sodium bicarbonate given intravenously. A small amount given by mouth had not been retained. About five minutes after this last infusion, which had been given slowly and had been apparently well taken, the patient's face suddenly grew pale, she commenced to have great inspiratory difficulty, and became very apprehensive. She complained of numbness and tingling of the fingers, and begged to have them rubbed. The hands assumed the typical obstetrical position, there was pedal spasm, and a first degree facial phenomenon (Chvostek's sign) was obtained. The pulse was accelerated to about 130, and the extremities became cold. There was no elevation of the blood pressure. The acute attack lasted for about fifteen minutes, after which the breathing became easier and she was less apprehensive. The *main d'accoucheur* position was maintained for about two hours. The following day the plasma bicarbonate capacity was eighty volumes per cent. On this day a second degree Chvostek's sign was obtained and Trousseau's phenomenon was easily elicited. Trousseau's phenomenon was present for four days and Chvostek's sign until the night of the seventh day, when the patient died.

Changes in Blood Immediately Following Transfusion.—Following the injection of blood, Huck found an immediate increase in the red cell count, the striking point being the marked increase in many cases apparently out of proportion to the quantity of blood introduced. In one case, the red count rose from 880,000 to 1,488,000 immediately after the injection of 500 c.c.; and in another case from 480,000 to 1,300,000, following the injection of 650 c.c. Such remarkable changes, Huck believes, apparently indicate a rapid redistribution of blood following an injection. In some cases the initial increase continued for several hours, usually falling, so that at the end of twenty-four hours the count had fallen to approximately where it was before the transfusion. In other cases, however, there was a marked increase at the end of twenty-four hours. In several instances, after injection of blood, the count fell for a few hours and then rose slightly. The hemoglobin in most cases showed a uniform rise following transfusion, usually reaching its maximum at the end of twenty-four hours. In some cases the hemoglobin fell slightly after the initial rise. Changes in hemoglobin did not run parallel with changes in the red count, as shown by the variations in the color indexes.

In practically every case following transfusion there was some increase in leukocytes. In several instances, however, they remained practically stationary or even fell. The most striking change in the differential count is the increase in the polymorphonuclear neutrophils. Occasionally, a neutrophilic myelocyte was seen following transfusion. In these cases no outpouring of nucleated red cells occurred, although in four instances a few were seen following transfusion, but not before. The numbers are so small, however, that this may have been accidental. A general review of the immediate effect of transfusion on the blood count in twenty cases does not reveal any constant changes following this procedure. The point of practical interest and importance seems to be that no exact mechanical effect can be demonstrated following the introduction of definite quantities of blood. Whereas, in a general way, it may be said that the introduction of blood raises the count, the effect is essentially a biologic one involving the redistribution of blood in the body, and its exact nature is not at present understood.

Bulletin of Lying-In Hospital of City of New York

March, 1918, **11**, No. 4

*Open Air Treatment in Anemia Due to Repeated Hemorrhage. J. W. Markoe, New York City.—p. 209.
*Toxemias of Pregnancy and Their Treatment. A. B. Davis, New York City.—p. 212.
Conservative Treatment of Eclampsia. R. McPherson, New York City.—p. 225.
Cesarean Scar: An Anatomic Study. J. R. Losee, New York City.—p. 228.
Case of Antepartum Mammary Hyperemia Due to Unrecognized Malignant Disease. G. W. Kosmak, New York City.—p. 241.
Birth Dislocations of Cartilaginous Epiphyses. E. D. Truesdell, New York City.—p. 245.
Causes of Death in Childbirth; Maternal Mortalities in 100,000 Confinements at New York Lying-in Hospital. J. A. Harrar, New York City.—p. 257.

Open Air Treatment in Anemia.—In cases of severe hemorrhage from any cause other than the blood diseases, when the bleeding is controlled before a fatal amount has been lost, Markoe has adopted the open air treatment, placing the patient directly out of doors, or, where that is impossible, he has moved her into the room containing the greatest cubic air space and the largest number of windows. Markoe also follows this procedure in many forms of septic infection in which efforts to build up the resistance of the patients seems unavailing until they are placed in the open air with proper surroundings.

Toxemias of Pregnancy.—The treatment of the preeclamptic state employed by Davis consists of milk diet, 2 to 3 quarts of milk in twenty-four hours; a hot bath daily, colonic irrigation with bicarbonate of soda solution, and a saline cathartic, preferably magnesium sulphate. Bicarbonate of soda given by mouth will reduce or entirely cure the heartburn and acid indigestion. This course is followed for a week or ten days. As improvement appears the patient is allowed out of bed part of the day. Gradually cereals, eggs and non-nitrogenous foods are added to the diet. The daily hot bath,

mild saline catharsis, milk and cereal diet and bicarbonate of soda are continued. The treatment of the eclamptic state: stomach lavage with bicarbonate of soda solution, followed by 2 ounces of magnesium sulphate. The colon is irrigated, employing from 4 to 5 gallons of normal salt, glucose or soda solution. Davis prefers soda solution. The essential thing is the large quantity of fluid introduced which clears the colon and by absorption flushes the kidneys, in this way proving to be the best diuretic. Stimulate all the emunctories; dilute and remove as much toxic material as possible. Very little internal medication is used. Chloral hydrate, sodium bromid, and morphin usually comprise the list. In operative deliveries, ether is used as a rule, chloroform never, rarely gas and oxygen. If the condition of the patient demands it, immediate delivery is done.

Canadian Medical Association Journal, Toronto

March, 1919, **9**, No. 3

Early Stages of Trench Nephritis. G. S. Straby, C. A. M. C.—p. 193.
Economic Effects of Disablements. J. L. Biggar, R. O.—p. 201.
*Rôle of Thymus in Exophthalmic Goiter. N. B. Eddy, Montreal. —p. 203.
Man's Place in Nature. J. Third, Kingston, Ont.—p. 213.
Return of Army Medical Officer. E. J. Williams, C. A. M. C.—p. 221.
Prostatic Massage. W. T. Lockhart, C. A M. C.—p. 223.
Influenza and Vaccination. J. J. Heagerty, Grosse Isle.—p. 226.
Tuberculosis as Causative Factor in Disordered Action of Heart. H. R. MacIntyre, C. A .M .C.—p. 229.
Use of Roentgen Rays in Gastro-Intestinal Diagnosis. H. H. Cheney, Montreal.—p. 238.
Hospital Treatment of Summer Diarrhea. L. M. Lindsay, Montreal. —p. 243.
Hypernephroma and Renal Cancers: Five Cases. C. T. Crowdy, Montreal.—p. 246.
Case of Congenital Bilateral Anophthalmos. J. Rosenbaum, Montreal. —p. 255.

Rôle of Thymus in Exophthalmic Goiter.—In an attempt to determine whether an excess of the product of thymus activity in the circulating blood could cause exophthalmic goiter or not, experiments were made by Eddy on rabbits. Two rabbits served as a control. Three rabbits were given hypodermic injections of thymus substance in the proportion of 5 mgm. per kilogram of body weight, and three in the proportion of 10 mgm. per kilogram. Forty injections were given to each rabbit. There was no evidence of the production of symptoms characteristic of exophthalmic goiter by the thymus gland substance employed in either group of rabbits.

Journal of Biological Chemistry, Baltimore

March, 1919, **37**, No. 3

*Effect of Acetone and of β-Hydroxylbutyric and Acetoacetic Acids On Blood Catalase. W. E. Burge, Urbana, Ill.—p. 343.
Lactose, Fat and Protein in Milk of Various Animals. O. Folin, W. Denis, and A. S. Minot, Boston.—p. 349.
Methods for Quantitative Determination of Non-Protein Nitrogenous Constituents of Milk. W. Denis and A. S. Minot, Boston.—p 353.
Determination of Distribution of Nitrogen in Certain Seeds. J. F. Brewster and C. L. Alsberg, Washington.—p. 367.
Reduction of Quantity of Humin Nitrogen Formed in Hydrolysis of Nitrogenous Constituents of Feedingstuffs. H. C. Eckstein and H. S. Grindley, Urbana, Ill.—p. 373.
Experimental Studies on Growth: X. Late Growth and Senescence of Normal White Mouse, and Progressive Alteration of Normal Growth Curve Due to Inbreeding. T. B. Robertson and L. A. Ray, Toronto.—p. 377.
Id. XI. Growth and Senescence of White Mice Fed on Pituitary (Anterior Lobe) Tissue, Tethelin, Egg Lecithin, or Cholesterol. —p. 393.
Id. XII. Influence of Pituitary Gland (Anterior Lobe) Tissue, Tethelin, Egg Lecithin, and Cholesterol on Duration of Life of White Mouse.—p. 427.
Id. XIII. Lesions Exhibited by Normal, Pituitary, Lecithin, Cholesterol, and Tethelin-Fed White Mice at Occurrence of Natural Death with Especial Reference to Incidence and Development of Spontaneous Cancer.—p. 443.
Id. XIV. Influence of Tethelin on Growth of White Mouse.—p. 455.
Absorption Spectra of Acid Hematin, Oxyhemoglobin and Carbon Monoxid Hemoglobin. New Hemoglobinometer. H. S. Newcomer, Washington.—p. 465.

Blood Catalase.—The increased oxidation in diabetes is attributed by Burge to the increase in catalase which is due to the stimulation of the liver to an increased output of this enzyme by acetone and β-hydroxylbutyric and acetoacetic acids.

Journal of Medical Research, Boston

January, 1919, **39**, No. 3

*Endocardial Lesions Developing During Pneumococcus Infection in Horses. A. W. Wadsworth, Albany, N. Y.—p. 279.
Successful Treatment of Giardiasis in Rats with Arsenobenzol. C. A. Kofoid, W. C. Boeck, D. E. Minnich and J. H. Rogers, U. S. A. —p. 293.
*Fate of Typhoid Bacilli Injected Intravenously into Normal and Typhoid Immune Rabbits. J. T. Parker and E. Franke, New York City.—p. 301.
Gross and Minute Anatomy of Spleen in Health and Disease. L. Gross, Montreal.—p. 311.
*Unusual Diffuse, Indolent Ulceration of Intestine with Filamentous Mycobacteria, Following Empyema of Pleura. C. T. Crowdy, Montreal.—p. 338.
*Methods of Isolation and Identification of Members of Colon-Typhoid Group of Bacteria. J. Bronfenbrenner, C. R. Davis and K. Morishima, Cambridge, Mass.—p. 345.
*Bacteriology of Canned Foods. J. Weinzirl, Seattle, Wash.—p. 349.
Regulation of Intestinal Flora of Dogs Through Diet. J. C. Torrey, New York City.—p. 415.

Pneumonococcus Infection and Endocardial Lesions.—The postmortem examination of seven horses immunized against Types I, II and III of the pneumococcus showed that horses undergoing active immunization by the intravenous inoculation of living virulent pneumococcus cultures develop infectious processes locally in the joints and in the tissues of the organs, but especially in those of the heart, including the heart valves. These lesions are intimately associated with injury of the blood vessels due to the action of the pneumococcus poisons, and are thus infectious processes in which the bacterial development may be evanescent and promptly followed by complete resolution or by reparative processes with scar tissue, or the bacterial development may persist, inciting varying degrees of inflammatory reaction and necrosis before the bacteria are destroyed and the reparative process heals the injury. All stages of these lesions were found in the heart valves: petechial and larger hemorrhages with and without inflammatory reaction and larger and smaller areas of necrosis in which pneumococci were present in large or small numbers or absent altogether, all in various stages of development, resolution and repair.

Wadsworth calls attention to the fact that these lesions correspond with those of acute and chronic endocarditis in man. The anatomic changes of the ulcerative or vegetative and the sclerosed lesions in man are all to be found in these lesions of the horse. It is, therefore, not necessary to assume that the chronic lesions of endocarditis in man, however slight or marked, or however free from evidences of bacterial activity, have not been originally infectious processes. The importance of predisposing injury determining the localization of the bacteria is also demonstrated by Wadsworth, but it is evident that the bacterial poisons produce this injury so that the bacterial localization may be practically coincident with it or follow it immediately. It also appears that in these experiments on the horse, and doubtless also in the disease as it occurs in man, the endocardial lesions arise from injury of the bacteria and their poisons carried to the endocardial tissues through the coronary circulation and not from the direct action on the endocardium of bacteria and their products passing in the main blood-stream of the ventricles and auricles. Wadsworth points out that in order to clarify our conceptions of pneumococcus infection, and doubtless also streptococcus infection, it is necessary to recognize the parasitic and the toxic activities of the inciting agents as being distinct phases of the infectious processes and yet not as entirely separate or independent activities because they are in point of fact closely linked and largely, if not wholly, dependent one on the other.

Typhoid Bacilli Injected into Rabbits.—An attempt was made by Parker and Franke to demonstrate some difference in either the killing or localization of typhoid bacteria in normal and immune rabbits. Their results were entirely negative in regard to the killing of the bacteria. Both in normal and immune animals the bacteria are taken up and killed in the organs with extraordinary speed. The lungs of immune rabbits, however, take up a slightly greater number of bacteria than do normal lungs.

Diffuse, Indolent Ulceration of the Intestine.—The lesion reported by Crowdy was found during a postmortem exami-

nation of the body of a man who died of bronchopneumonia following empyema. The large intestine showed an indolent ulceration, most marked in the cecum and ascending colon. The dependent part of the cecum escaped to a large degree, but close to the ileocecal valve was a large irregular ulcerated area (about the size of a 50-cent piece) in which the mucous membrane was entirely lost, except for a few very small, irregular strands. In the ascending colon the surface of the mucous membrane had a honeycombed appearance, being made up of innumerable small, irregular, shallow, pale ulcers with sloping necrotic margins separated by about an equal amount of degenerating mucous membrane. Toward the hepatic flexure the ulceration became less diffuse, and large, isolated and irregularly outlined ulcers occurred, giving the mucous membrane a moth-eaten appearance. These gradually diminished in number and disappeared near the splenic flexure. The lower end of the ileum also showed a few scattered irregular ulcers similar to those in the transverse colon and extending upward for about 90 cm.

A considerable number of sections, both from the ileum and cecum, were stained by the Gram-Weigert method, with the following result: On the surface of the intestine, the usual numerous forms of bacilli and cocci were present. Within the tissues, however, a large mycobacillus of marked pleomorphism was to be seen. A very common form was a long, thick rod with rounded ends, which stained in alternating darker and lighter segments. This was found in the submucosa beneath the ulcers, and in the islands of the mucosa. With it occurred spherical coccoid bodies, and transitions to bacilli. They were diffuse, in bunches or isolated. A second, also common, form was an elongated, club-shaped, frequently curved or bent, slender organism carrying conidia at one pole, often resembling an exclamation sign, or spermatozoon in shape. This appeared in various modifications and transitions. In some of the smaller veins and capillaries other forms of apparently the same micro-organism were detected. The character of the threads and apparent lack of true branching point to cladothrix.

Identifying Culture Medium for Colon-Typhoid Group of Bacteria.—Bronfenbrenner and his associates use fresh milk and milk-whey for culture material. It is prepared as follows: Heat fresh milk in the Arnold sterilizer for fifteen minutes, place on ice for eight to twelve hours; separate the cream; dilute one part of milk with three parts of water; add indicator (CR [mixture of China blue and rosolic acid]) at the rate of 2.5 c.c. per hundred c.c. of diluted milk; boil for five minutes; if too acid adjust the reaction until pale gray color is obtained; distribute in sterile tubes containing inverted vials, and autoclave at 15 pounds pressure for ten minutes. In the preparation of milk-whey medium, use fresh milk; siphon the milk from under the cream; bring it to boiling and add 2.5 c.c. of 10 per cent. $MnCl_2$ solution to each 100 c.c. of milk; cool the mixture as soon as the clot is formed and filter through a single layer of cloth; titrate an aliquot portion hot and adjust the bulk of the medium to neutral reaction ($1x10^{-1}$); bring quickly to boiling, cool and filter through paper; dilute the filtrate with double its volume of water and add 1 c.c. of CR indicator for 100 c.c. of medium. (At this point the medium will have an intensely blue color.) Dilute into sterile tubes containing inverted vials and autoclave at 15 pounds pressure for ten minutes. Immediately after autoclaving the medium will have a pink color. On cooling it will become colorless if it is properly neutralized. However, a slight tinge of blue or pink will be very easily distinguished from the intense color due to the progressive change in hydrogen ion concentration during the growth of the culture.

In making milk-whey agar, an agar jell of 3 per cent. concentration in plain water is sterilized and diluted with an equal volume of neutralized milk-whey. While the mixture is hot add CR indicator at the rate of 0.5 c.c. for each 100 c.c. of medium, distribute into sterile tubes and sterilize for ten minutes at 15 pounds pressure. In the authors' experience, this medium is fully as useful as lactosepeptone water or lactose agar, but cheaper and easier to prepare.

Bacteriology of Canned Foods.—Bacteriologic examinations were made by Weinzirl of 1,018 samples of canned goods. The organisms isolated from these 1,018 samples of canned goods comprised yeasts, molds, and bacteria. The most prevalent species of bacteria were *B. mesentericus, B. subtilis, B. thermoindifferens, B. vulgatus* and *B. cereus.* The most prevalent mold was *Aspergillus nidulans.* In commercial canned foods giving no evidence of spoilage, micro-organisms were found in 179 out of a total of 782 cans, or in 23 per cent. of the cases. After the food is processed, the spores remaining alive in the cans are unable to develop because of the absence of free oxygen. When air is admitted the spores may germinate and spoil the food. Members of the paratyphoid-enteritidis group were not found, nor was *B. botulinus* ever isolated.

Journal of Pharmacology and Experimental Therapeutics, Baltimore

February, 1919, **12**, No. 7

*Pertonal: Acetyl-Amido-Ethoxy Benzene. D. Cow, Cambridge, Mass. —p. 343.
*Pharmacologic Action of Allocain S. (New Local Anesthetic) S. Kubota, Mukden, Japan.—p. 361.
*Effect of Atropin on Ether Hyperglycemia. E. L. Ross, Chicago. —p. 377.

p.Acetyl-Amido-Ethoxy Benzene. — The pharmacologic actions of pertonal (acetyl-amido-ethoxy benzene) have been investigated by Cow and a comparison made between it and phenacetin. Pertonal possesses approximately one half the toxicity of acetphenetidin (phenacetin) and as an antipyretic it produces similar effects in doses approximately double those of acetphenetidin. Acetphenetidin exerts a directly depressant action on the heart, which is actually stimulated by pertonal. Against an antipyretic ratio of 2 parts of pertonal to 1 part of acetphenetidin, the corresponding ratio for narcotic action is approximately 15 to 1. In general the action of pertonal is less abrupt and more prolonged than that of acetphenetidin. Both drugs are excreted mainly in the urine in the form of p. amidophenol and phenetidin. It appears that a larger amount of phenetidin and a correspondingly smaller amount of p.amidophenol is set free in the tissues by pertonal than by acetphenetidin. No evidence of methemoglobin formation has been found after pertonal, whereas this change is often found after acetphenetidin. No evidence of oxalic acid formation after pertonal has been found, though this was specifically sought for. A range of therapeutic dose of 10 to 20 grains or more is recommended: it is suggested, too, that the dose need not be repeated so frequently as the dose of acetphenetidin.

Pharmacologic Action of Allocain S.—Allocain S. and Allocain A. are synthetic products made by Nagai by introducing into mydriatin mono-ethyl and di-ethyl and benzoyl groups. Kubota studied the pharmacologic action of Allocain S. He found that it causes paralysis in frogs and convulsions in rabbits, acting on the central nervous system. The lethal dose, when injected subcutaneously, is smaller than that of cocain and procain. It causes a local paralysis of sensory nerve endings and nerve fibers, and its anesthetic power is stronger than procain and weaker than cocain. Allocain S. has a twofold action on blood vessels: a primary dilation and a secondary constriction, and in warm blooded animals the former action, and in cold blooded animals the latter appears more marked. Subcutaneous injections of Allocain S. cause a slight local irritation. A great amount of it paralyzes the heart, acting on the motor apparatus and conductive system, and causes in frogs a paralysis of respiration and in rabbits a stimulation of it, which action seems to be the central character. The blood pressure is influenced by Allocain S. The substance produces a primary fall of pressure which is followed by a rise above the normal. It inhibits the growth of both streptococci and staphylococci. Allocain S. is a good local anesthetic in many respects, but on the other hand it has also some unfavorable qualities. On account of the slight irritation by its acid solutions and of its precipitation by tissue fluids, its use is limited. Allocain S. has been tried in several hundred cases of operation with success.

Effect of Atropin on Ether Hyperglycemia.—The animal experiments made by Ross showed that atropin reduces markedly ether hyperglycemia; the greatest reduction is in the first fifteen minutes.

Kansas Medical Society Journal, Topeka

March, 1919, **19**, No. 3

Infection of Accessory Nasal Sinuses. G. H. Itsinger, Topeka.—p. 49.
Chronic Peritonsillar Infections. W. Lapat, Larned, Kans.—p. 54.

Medical Record, New York

March 22, **95**, No. 12

Rôle of Cell Necrosis and Bacterial Invasion in Surgery. F. B. Turck, New York City.—p. 471.
Suggestions for National Museum of Medicine. R. W. Shufeldt, Washington.—p. 482.
Medical Treatment of Appendicitis. A. Abrams, San Francisco.—p. 484.
Nature of Shock. H. Crutcher, Tolarosa, N. Mex.—p. 485.

New York Medical Journal, New York

March 22, 1919, **109**, No. 12

Tuberculosis in Children. J. P. C. Griffith, Philadelphia.—p. 485.
Value and Limitations of Radium in Treatment of Cancer. R. H. Boggs, Pittsburgh.—p. 488.
*Clinical Study of Influenza Pneumonia. A. D. Rood, Takoma Park, D. C.—p. 493.
Etiology and Treatment of Bronchial Asthma. W. C. Thro, New York City.—p. 500.
Bronchial Asthma in Children. W. H. Donnelly, Brooklyn.—p. 503.
Clinical Application of Quartz Ultraviolet Light in Constructive Tissue Chemistry. D. McCaskey, New York City.—p. 504.
Abuse of Alcohol for Rubs and Other Bodily Uses. N. Rosewater, Cleveland.—p. 506.
Prevention of Postoperative Thirst. B. Van Hoosen, Chicago.—p. 507.
Prophylaxis and Treatment of Influenza. L. T. de M. Sajous, Philadelphia.—p. 509.

Influenzal Pneumonia.—As the great majority of patients extremely ill showed typical signs of shock, various efforts were made by Rood and his associates to combat this condition but no results beyond a temporary improvement were observed. The fluid extract of ergot was used with good temporary results. Ergotin was used with no noticeable action. Epinephrin and pituitary extract were practically useless, neither producing any rise in blood pressure or even a transitory stimulation. Alcohol in any form was seldom used. Locke's solution with 13 per cent. acacia was given in a number of cases intravenously, in order that the presence of a colloid might possibly prevent, to a certain extent, the absorption of toxin, and, at the same time furnish a diluent. This solution gave the most striking results, improvement often being immediate and continuing from six to eight hours. It gave best results when given from two to three times a day, at six or eight hour intervals. Bromids in full doses when the patient was restless and unable to sleep. Occasional doses of chloral hydrate were given either for its direct hypnotic action or to fortify the effect of bromid. Codein was used in preference to morphin to relieve pain and troublesome dry cough. Expectorants and narcotics of all kinds were avoided as most of these patients were already half drowned with exudates. Morphin was used only as a last resort or when pain could be controlled in no other way. Immune serum obtained from patients who had been convalescent from the disease for seven to ten days, was used in six cases, with curative results in only one instance. In most of these cases it did not appear to influence favorably the course of the disease in the least degree. Results obtained by oxygen were transitory, and as the condition progressed the cyanosis became as pronounced as before.

It was noted that often the patient was greatly relieved by lung puncture, especially if a pneumothorax followed the operation, and it was not uncommon for patients to request that the operation be repeated. Patients frequently showed a drop in temperature following puncture and a temporary improvement in physical signs. The cough and sputum would increase for a short time, followed by a marked decrease in the number of râles within a few hours. The results following this procedure led to the opinion that the production of a slight positive pressure in the side showing greater involvement might materially aid in compressing the profuse exudate from the affected lobes. With this purpose in view, an artificial pneumothorax was produced in three patients, in the hope from 100 to 150 c.c. of air into the pleural cavity, in the same manner as has been frequently carried out in the treatment of tuberculosis. These three cases were considered hopeless at time of injection. Two of the patients recovered, but the third one, whose case was considered hopeless, being intensely cyanosed, delirious, and moribund, became conscious and rational, and very few râles were to be heard in the chest of the side operated on and breath sounds were quite distinct. He continued to improve for thirty-six hours, when he again became delirious and comatose, dying forty-eight hours after operation.

New York State Journal of Medicine, New York

March, 1919, **19**, No. 3

Scientific Study of Delinquents. W. Healy, Boston.—p. 79.
Mentality of Adolescent Delinquents. A. T. Bingham, New York City.—p. 85.
How to Avoid Spoiling the Child. L. F. Barker, Baltimore.—p. 89.
Syphilis and the General Practitioner. A. T. Lytle, Buffalo.—p. 97.

Pennsylvania Medical Journal, Athens

March, 1919, **22**, No. 6

Plastic Surgery of the Face and Orbit in Relation to War Injuries. H. W. Scarlett, Philadelphia.—p. 337.
*Postoperative Sequelae of Acute Appendicitis. J. B. Deaver, Philadelphia.—p. 340.
Aseptic Technic in Obstetrics. C. G. Strickland, Erie.—p. 344.
*Fallacies of Methods of Giving Colonic Irrigations in Children. H. B. Mills and G. C. Bird, Philadelphia.—p. 346.
Nutritive and Blood Changes in Rats on Cancer Inhibiting and Stimulating Diets. E. P. Corson-White, Philadelphia.—p. 348.
*Physical Examination in Diagnosis of Early Pulmonary Tuberculosis. L. Hamman, Baltimore.—p. 353.
Application of Principle of Advanced Psychiatry. J. A. Jackson, Philadelphia.—p. 358.
Nervous and Mental Sequelae of Infectious Diseases. A. Gordon, Philadelphia.—p. 362.
*Combating Septicemia: Use of Arsphenamin. S. R. Haythorn, Pittsburgh.—p. 368.
*Treatment of Syphilis of Central Nervous System. T. P. Tredway, Erie.—p. 375.
Intraspinal Auto-Arsphenaminized Serum Treatment of Cerebrospinal Syphilis. B. A. Thomas, Philadelphia.—p. 377.
Plastic Operations in Vagina and on Pelvic Floor. S. E. Tracy, Philadelphia.—p. 384.
Unusual Casualties. L. F. Frescoln, Philadelphia.—p. 390.
Health Insurance. I. Stern, Philadelphia.—p. 391.

Appendicitis.—Abstracted in THE JOURNAL, Nov. 23, 1918, p. 1769.

Fallacies of Colonic Irrigations.—Mills and Bird point out that when more than 4 or 5 inches of tube are inserted into the rectum it coils on itself, the end of the tube turning and coming back to the anus and, although apparently this does not interfere at all with the passage of the solution, as it is shown to have traversed the full length of the colon in spite of the coils, the occurrence of this coiling naturally suggests the question of the advisability and necessity of passing so much of the tube into the colon. The apparatus tested by the authors consists of a container for the fluid, held 18 to 24 inches above the level of the patient, to which is attached a rubber hose, at the end of which is a glass or hard rubber tip, and a soft rubber rectal tube or catheter. They first pass the well-oiled rectal tube or catheter into the rectum about 2 inches, the child lying on its back or left side on a Kelly pad. The tube is held in this position for a few minutes to allow of the escape of gas, as it has been found that the pain frequently complained of during colonic irrigation is entirely avoided if the gas is first gotten rid of. It is equally important to rid the tube attached to the container of all air by letting a few drops of the fluid pass through. The free end of the rectal tube or catheter is then slipped over the glass or hard rubber tip so that continuous connection exists between the child and the solution to be used, and the catch is then gradually sprung so that the fluid begins to flow slowly into the colon, the insertion of the rectal tube or catheter being at the same time gradually increased, often to a distance of 8 or 10 inches or more. The fluid used is usually either normal salt or 2 to 5 per cent. sodium bicarbonate solution; the temperature is about 100 F., and the quantity employed is rarely less than 2 quarts, and much more if it is not returning clear. The rectal tube or catheter has two holes at the end to be inserted in the rectum, one at the tip and the other at the side about one-half inch from the tip, so that should one become plugged with mucus or fecal

matter, the solution would pass through the other. When the colon is fully distended contraction takes place, which expels much of the contents, as shown by the squirting of the returning solution along side of the tube, so that there need be no fear of too much fluid being used. Massage of the abdomen when the colon is distended with fluid is often beneficial.

Pulmonary Tuberculosis.—Abstracted in THE JOURNAL, Nov. 23, 1918, p. 1770.

Septicemia.—Abstracted in THE JOURNAL, Nov. 23, 1918, p. 1770.

Cerebrospinal Syphilis.—Abstracted in THE JOURNAL, Nov. 30, 1918, p. 1855.

Southwestern Medicine, El Paso

February, 1919, **2**, No. 14

Use of Conjunctiva in Perforating Ocular Injuries. S. A. Schuster, El Paso, Texas.—p. 4.
Treatment of Peptic Ulcer from Internist's Standpoint. F. D. Garret, El Paso, Texas.—p. 4.
Lay Impressions of War Time France. P. Gallagher, El Paso, Texas.—p. 7.
Uniform Temperature in Prevention of Influenza and Pneumonia; Frequent Complications. S. L. Burton, Albuquerque, N. Mex.—p. 11.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

March 1, 1919, **2**, No. 3035

Imperial College of Science, Kensington. A. Keogh.—p. 237.
*Defense of Respiratory Membrane Against Influenza, Etc. L. Hill.—p. 238.
Cause, Prevention, and Vaccine Treatment of Influenza. W. M. Crofton—p. 240.
*Treatment of Influenza. W. D. D. Small, and W. O. Blanchard.—p. 241.
Epidemiology of Influenza Among Workers in Gas Works, Cordite Factory, and Tin Mine. A. Gregor.—p. 242.
Treatment of Wounds by Paraffin. E. F. Pratt.—p. 243.
*Acriflavine Emulsion as Wound Dressing. T. E. A. Stowell.—p. 244
*Treatment of Acute Gonorrhea: Massage-Pack Method. J. P. Fogarty.—p. 245.

Defense of Respiratory Membrane Against Influenza.—To combat the influenza infection, Hill urges the deep breathing of cool air, brought about by exercise, sleeping in open air, and as an adjunct any spray, gargle, or snuff which enhances the outflow of secretion from the respiratory membrane of the nose and throat. He says that the wearing of a mask, by raising the temperature and humidity of the air breathed, is against the natural defensive mechanism. The natural defense must be raised by the discipline of open-air exercise and by proper housing.

Treatment of Influenza.—Groups of patients—fifteen in each—were put on different drugs by Small and Blanchard and the progress of the various groups noted and compared. Aconite, acetylsalicylic acid, sodium salicylate, belladonna, arsenic, quinin, Dover's powder, and gelsemium were tested in this way. The patients treated by gelsemium improved in a manner far exceeding those given any other treatment. After a few doses headache and backache had been much relieved, and the patients felt greatly benefited in every way. In most patients, the temperature speedily commenced to fall, and the improvement in the general condition was obvious. Of the other drugs tested, belladonna showed evidence of beneficial action in a number of cases, but none of the other drugs appeared to have the slightest influence. The patients were not selected in any way, but were taken consecutively as they were admitted. All recent cases, therefore, have been treated with the following mixture:

	gm. or c.c.		
℞ Tr. gelsemii	73		♏ xij
Tr. belladonnae	33		♏ v
Potassii citratis	66	or	gr. x
Syr. aurantii	4		ʒ j
Aq. chloroformi ad	30		ʒ j

Sig: One ounce four hourly for the first 24 hours; thereafter ½ ounce every four hours until temperature is normal.

Potassium citrate is added as a mild diuretic. When the temperature reaches the normal the remedy should be stopped.

Acriflavine Emulsion as Wound Dressing.—The formula (Humphrey's) of an emulsified preparation of the dye endorsed by Stowell is as follows: Acriflavine, 0.1; thymol, 0.005; white wax, 4.0; liquid paraffin, 76.0, and distilled water, 20.0. This emulsion is put up in small sterile bottles, stoppered and sealed. The addition of the thymol has given better results in cases of mixed infection, and its presence has not prejudiced the results in the simpler cases. In dealing with broken down tuberculous glands, after scraping, Stowell introduces a small quantity of the emulsion before closing the wound.

Treatment of Acute Gonorrhea.—It is now an Australian Army Medical Corps order that the massage-pack method of early treatment of gonorrhea shall be used to the exclusion of all others. The treatment consists in packing the anterior portion of the urethra with a material soaked in a silver solution. The pack not only absorbs the discharge and drains the infected part, but, by mechanically dilating the urethra, it enhances the prospects of the chemical reaching the site of the infection, and prevents apposition between infected and noninfected surfaces. For packing, Fogarty has found soft gauze far superior to cotton-wool. It is more absorbent, less irritating, and is more easily passed into and withdrawn from the urethra; it has no tendency to break, and shreds are not detached from it. In the large majority of cases argyrol has been used. From a curative point of view an argyrol solution stronger than 5 per cent. is not necessary, and 7 and 10 per cent. show a tendency to cause soreness, necessitating less frequent packing, thus depriving the patient of the benefit of the mechanical advantages of the pack. Fogarty has found hemorrhage even with 10 per cent. a rare occurrence, and not in one single instance with 5 per cent. There were only seven failures in 742 cases treated.

Journal of Laryngology, Rhinology, and Otology, London

February, 1919, **34**, No. 2

Cases of Foreign Body in Air and Food Passages. T. Guthrie.—p. 38.
Non-Suppurative Labyrinthitis (Ménières Disease); Operation; Recovery. A. Dighton.—p. 47.
Angioma of Larynx: Report of Case. R. McKinney.—p. 49.
Vertigo and Nystagmus Associated with Inflation of Eustachian Tube. S. Scott.—p. 51.

Lancet, London

March 8, 1919, **2**, No. 4984

Early Treatment of Compound Fractures and Other Severe Injuries of Upper Limb. E. G. Slessinger.—p. 365.
Hysterical Element in Organic Disease and Injury of Central Nervous System. A. F. Hurst and J. L. M. Symns.—p. 369.
*Detoxicated Vaccines. D. Thomson.—p. 374.
*Spirochetes in Blood in Trench Fever. A. C. Coles.—p. 375.
Lower Uterine Segment and Uterine Tendons. E. H. Tweedy.—p. 376.
*Attenuation of Human, Bovine, and Avian Tubercle Bacilli. N. Raw.—p. 376.
Gonorrhea Complicated by Acute Gonorrheal Arthritis and Keratosis. N. P. Laing.—p. 377.
Case of Pelvic Sarcoma. J. H. Hart.—p. 378.
Unilateral Hydrothorax Due to Disease Below Diaphragm: Two Cases. W. G. Nash.—p. 378.

Detoxicated Vaccines.—Thomson has conducted extensive researches on the removal of the endotoxins from the gonococcus and other organisms in order to produce nontoxic vaccines which could be injected in sufficiently large doses to develop a great amount of immunity. The toxicity of most germs was successfully reduced some fifty to 100 times. Thus, with ordinary gonococcal vaccine it was found necessary to begin in acute cases with doses not exceeding 5 millions and gradually to increase to about a maximum of 250 millions. On the other hand, the same strains of gonococci when detoxicated could be administered in acute cases in doses of 2,500 millions and increased to 10,000 millions. These large doses caused even less toxic symptoms than the small doses of the ordinary vaccine.

The therapeutic results obtained corresponded very markedly with the serologic tests. Thus it was found that the cases which showed the highest degree of immunity as estimated by the complement-fixation test recovered much more devoted to physiotherapy, as he was an international authority

rapidly, and vice versa in those which showed a low degree of complement fixation the disease ran a prolonged course. The dose of 200 millions of ordinary gonococcal vaccine produced malaise and fever in the normal subject, whereas the symptoms arising from a dose of 5,000 millions of the detoxicated vaccine were scarcely noticeable and no fever was induced. Experiments have been carried out with detoxicated vaccines for the prevention and treatment of bronchial and nasal catarrh and the results so far have been very promising. Thomson says that the clinical evidence is increasingly convincing that this detoxication process will revolutionize the whole subject of vaccine treatment and preventive inoculation.

Spirochetes in Blood in Trench Fever.—In two out of six cases of trench fever Coles found a few spirochetes or spirochetal-like bodies in one or two of the many films examined. These structures vary considerably in their form, but they have in common the fact that with Giemsa they are all stained a delicate blue tint; they are all faintly granular, and in no case are the ends pointed. Whether they have any actual causal relation to trench fever, Coles does not say. The fact that they were detected only in the blood of definite cases of artificially induced trench fever, and then only during the first attack of fever, he believes is at least suggestive.

Attenuation of Tubercle Bacilli.—The effect of long continued and regular subculturing of pure cultures of human, bovine, and avian tubercle bacilli on artificial mediums containing glycerin is reported by Raw. This process has been continued without interruption for twelve years and the cultivations are luxuriant and grow as readily as in the first year of subculturing. They retain all their characteristics and selective appearances, and can easily be identified as distinct types of tubercle bacilli. The real object of this work was to find out if it was possible to reduce the virulence of the bacilli to such a degree that it might be possible to use them therapeutically in the treatment of active tuberculosis. In 1914, several animals were inoculated with bacilli of nine years' attenuation with practically negative results. In no case was any progressive tuberculous process set up in the animals, and postmortem examinations showed no active tuberculosis. Eight cases of apparently hopeless tuberculosis of the glands, bones, joints and lupus; all discharging sinuses were treated with injections of living bacilli at intervals of one week. The injections were made subcutaneously in the triceps region, and aside from redness and slight swelling no bad effects were observed, and the patients noticed nothing unusual. Later, four cases of acute and active pulmonary tuberculosis with large numbers of bacilli in the sputum were treated in the same way. All these patients are still living, and a full report will be published after an interval of five years from the date of treatment. In all of the cases treatment with mixed bacilli was given, the cultures being raised to a temperature of 220 F. for two minutes before injection.

Bulletins de la Société Médicale des Hôpitaux, Paris

Dec. 6, 1918, **42**, No. 34

*Sugar and Urea in Cerebrospinal Fluid. Dumolard, Lochelongue and Regnard.—p. 1121.
*Serotherapy of Gas Gangrene. Sacquépée and de Lavergne.—p. 1125.
*Gastric Juice in Fasting Stomach. F. Ramond and Robert.—p. 1134.
*Gangrene of Lung and Pneumothorax. A. de Verbizier and Loiseleur.—p. 1139.
*Nervous and Mental Sequels of Icterohemorrhagic Spirochetosis. S. Costa and J. Troisier.—p. 1142.
*Benzol in Myeloid Leukemia. H. Bourges.—p. 1149.
Hyperthyroidism Following Emotional Stress, with Hypertrophy of Parotid Glands. G. Railliet.—p. 1151.

Diagnostic Importance of Sugar and Urea in the Cerebrospinal Fluid.—Dumolard relates that in eighteen of seventy cases of nervous or mental disturbance, at a special army neuropsychiatric center, the cerebrospinal fluid showed an abnormally large proportion of sugar or of urea or of both combined, without any reaction on the part of the leukocytes, and without hyperalbuminosis. In the other cases there was sometimes an excess of sugar or urea but there were other reactions evident as well. In these eighteen cases the sugar content was over 0.80 gm. and the urea over 0.25 gm. per liter, and all these men presented severe nervous or psychic disturbance. The tabulated findings suggest that in the sugar and urea content of the fluid we have an early sign of pathologic conditions, the first revelation of organic disturbance in the functioning of the nervous system. In some of their cases there were evidences of meningeal hemorrhage, softening of the brain or epilepsy, jacksonian in one case.

Gas Gangrene.—Sacquépée discusses the pathogenesis of gas gangrene and the action of serotherapy according to the effects of the specific serum on guinea-pigs. This indirect test, the "protected guinea-pig test" as he calls it, is based on the specific protection conferred on the animal by the antitoxic serum against inoculation of the corresponding pathogenic microbe. An emulsion of a scrap of gas gangrene tissue containing one or more of the pathogenic species kills the guinea-pig. But if the guinea-pig has been previously protected by the corresponding antiserum, the animal will survive while the controls all die, as also those animals protected only with an antiserum specific for other microbes than the one directly involved. In their twenty-five experiments, the *Bacillus bellonensis* was found alone or associated in fifteen, the perfringens in fourteen, and the septic vibrio in nine of the total twenty-five.

Gastric Juice in the Fasting Stomach.—Ramond and Robert found in normal soldiers that the fasting stomach was empty on the usual meat diet. But on a milk diet, and also on a purely vegetable diet, gastric juice was found in the fasting stomach quite often. In the dyspeptic, gastric juice was found in the fasting stomach in 66 per cent. of 100 examined, but the amount of hydrochloric acid varied with the amount of meat in the diet. In the mild cases the meat seemed to reduce the hydrochloric acid content, and thus aided in the prognosis. The amount of gastric juice ranged from 20 to 50 c.c. in ordinary dyspepsia; above 100 c.c., some degree of stenosis can probably be assumed. In the discussion it was emphasized that traces of food always indicate more or less stenosis of the pylorus. The general conclusions of Ramond and Robert are to the effect that gastric juice can be found in the fasting stomach even in normal persons on a vegetable diet, but there should not be any present on a meat diet. In the dyspeptic, gastric juice is found in the fasting stomach, but this gastrosuccorrhea, although almost constant, has no pathologic significance unless it is profuse and continuous, and is uninfluenced by modification of the diet.

Gangrene of Lung Heals Under Induced Pneumothorax.—De Verbizier and Loiseleur witnessed the development of a focus of gangrene in the lung a week after the onset of grave influenza with involvement of the right lung. The resulting cavity was partially drained into the bronchus but not adequately, and the general condition was growing graver. The roentgen rays showed the clear outlines of the gangrenous cavity, and by inducing artificial pneumothorax this compressed the lung so effectually that the contents of the cavity were squeezed out. The walls of the cavity were thus pressed together, and definite healing soon followed. They state that in fifteen days the rays showed integral restitution of the parenchyma of the lung. During the interval, the 200 c.c. of air that had been injected were completely absorbed and the diaphragm was functioning clinically normally. Success with this technic naturally depends on the possibility of an effectual pneumothorax and on the cavity draining into one of the larger bronchi. It would be dangerous to compress a gangrenous focus connecting merely with one of the smaller bronchioles.

Nervous and Mental Sequels of Icterohemorrhagic Spirochetosis.—Costa and Troisier have previously described what they call the psychomeningeal form of this spirochetosis. They here report three additional cases, and call attention to the coincidence in the same patient of psychic disturbances, impairment of vision and modification of the reflexes, demonstrating the profound, durable and widespread damage of meninges, brain and medulla possible in icterohemorrhagic spirochetosis. Mania and confusion persisted even after recovery, and mental weakness with instability and irritability was marked in all three of the patients. One presented stigmata suggesting degeneracy but the others seemed to be

free from any predisposition of the kind. The existence also of organic sequels, especially renal, sustains the connection between the mental impairment and the spirochetosis. This psychomeningeal form was observed only in the graver cases, with uremia (one with very high urea content in the spinal fluid), dilatation of the heart, prostration, anemia, intense jaundice, photophobia, and extreme tenderness of the eyeballs. The Wassermann reaction is usually positive during this spirochetosis but veers to negative during convalescence; in one of the men it has persisted positive during the year to date, and there is nothing otherwise to suggest syphilis. One of the men presents also a double Babinski with exaggeration of the tendon reflexes, suggesting tenacious injury of the pyramidal tracts. Weeckers and Firket have reported cases of iritis and even a curable optic neuritis for which the icterohemorrhagic spirochetosis was evidently responsible.

Benzol in Myeloid Leukemia.—Bourges treated with benzol a man of 35 presenting symptoms of myeloid leukemia, giving 100 drops in milk three times a day. Gastro-intestinal disturbance and albuminuria the second day compelled the reduction of the dose to 50 drops, gradually returning to the former dose. This was kept up for two months and a half, with intervals of suspension every ten days, and marked improvement was evident. He gave up the treatment then, but returned ten months later in a very precarious state. Resumption of the benzol then failed to relieve and the man died in two weeks. During the first stage of treatment the blood improved, the spleen became reduced in size, the number of reds increased while the leukocytes and myelocytes became much reduced in numbers, and the whole condition showed pronounced improvement. It is therefore in the early phase of leukemia, during the almost latent stage, that benzol produces its finest effect. It seems advisable also to continue it for several months at a time, with possibly roentgen exposures in the intervals. This case, with others on record, teaches the wisdom of beginning with small doses, testing the susceptibility of the patient.

Nourrisson, Paris

January, 1919, **7**, No. 1

*Vomiting in Infants. A. B. Marfan.—p. 1.
*Increase in Weight During First Year of Life. L. Broudic.—p. 13.
*Emergency Surgery on Infants. R. Flament.—p. 23.
Child Welfare Legislation in France. A.-B. Marfan.—p. 32.

Vomiting in Infants.—Marfan discusses accidental and habitual vomiting in infants and cyclic vomiting, warning that sudden vomiting in the midst of health may be the first symptom of infectious disease. The temperature should be taken and signs of meningitis be sought, or of special intolerance for cow's milk, or signs of a strangulated hernia or invagination. Vomiting by a new-born child should suggest the possibility of congenital stenosis or imperforate anus. Only after all these causes have been excluded, should we think of a gastric origin for the vomiting. The symptoms of acute indigestion subside when the stomach and bowel have been emptied, which is important in differentiation of the cause of the vomiting. He does not give a purge or emetic, as this often seems to aggravate the condition. Restriction to water, with a few enemas, cures the child. The cause of the acute indigestion is an overabundant meal, especially when the preceding meal has not had time to complete its digestion, or a new dish may be the cause of vomiting. Some physicians have noticed that exposure to prolonged cold may induce indigestion and vomiting in infants. With bowel trouble, vomiting is usually an associated symptom, not taking the prominent place except possibly at the onset of trouble. Occasional regurgitation in infants is physiologic, but habitual regurgitation indicates that the child is gettng too much food. Breast fed children are the ones that present it most frequently, as they can tolerate overfeeding longer. Repeated hiccuping also indicates that even if the food is well digested, the child is getting too much. Excessive drooling has the same significance. Moderate drooling may occur because the infant does not know how to swallow saliva. It may accumulate in the mouth and throat and make the breathing noisy, suggesting stridor, etc. Up to the fourth or fifth month very little saliva is secreted. After this, coryza or adenoids may force the child to keep its mouth open and all the saliva may drool out although the amount secreted may be only the normal quantity.

Increase of Weight During First Year of Life.—Broudic gives the average weight of 112 infants as recorded at birth and at regular intervals thereafter. His records include really 2,000 infants but he was not able to have them all weighed at the specified intervals, so he bases his tables on only 300. Only one third were breast fed. These children increased in weight regularly and rapidly during the first six months, more slowly during the last six months. Only a few doubled their weight at birth by the fifth month, but even in this group the weight at birth had not trebled by the close of the year. The increase in weight is irregular with bottle fed babies; slow during the first three months and more rapid during the second three months. Infants given both breast and bottle increased in weight more regularly, like the breast fed. Whatever the mode of feeding, the weight shows comparatively little increase from the twenty-sixth month on, and the weight may remain stationary for a time or even decline. These irregularities are particularly manifest after the twenty-ninth week. He gives a chart and various tables and emphasizes the difference between his figures and those of others. The 2,000 infants were examined under the auspices of the Union maternelle of the fourteenth arrondissement of Paris. The average weight at birth was 3,280 gm.; at 5 months, 6,250 gm.; at 6 months, 6,710 gm.; at 1 year, 8,770 gm.

Emergency Surgery for Infants.—Flament refers to strangulated hernia, invagination of the bowel, osteomyelitis, mastoiditis and imperforate anus. With strangulated hernia he succeeded in overcoming the spasm, with the spontaneous retrogression of the strangulation, in seven among twenty-nine cases; in the others an operation was required and only two of the children died; the strangulation in these was of long standing. In seven spontaneously retrogressing cases he had had the child put at once into a warm bath. Gentle, cautious massage is allowable. Hot compresses can be applied for an hour or two, and with a few drops of chloroform the hernia may be reduced, but extreme gentleness and caution are necessary as the intestine is already damaged by the strangulation. Some device, like a hot water mattress under the infant, to ward off chilling during the operation, is indispensable. With invagination, the prognosis depends on the early diagnosis and prompt intervention, within the first twelve hours. The death rate runs up to 37, 54 and 78 per cent. the second, third and fourth days. Osteomyelitis in infants may be traced to the inadequate protection afforded by the skin. Flament recently encountered vertebral osteomyelitis in a 4 months infant, and osteomyelitis of the femur in one only 6 weeks old, and in the hip joint in one of seven weeks. Mastoiditis is merely osteomyelitis of the temporal bone, and in the twenty-one cases in infants in the clinic there had been preceding otorrhea in fifteen. The outer wall of the mastoid antrum is extremely thin in infants, and spontaneous trephining occurred in twelve of the twenty-one cases. The surgeon has only to enlarge the spontaneous opening. In infants the antrum is a little above and back of the external auditory passage, different from its location in older children. Only by prompt intervention can meningitis be warded off; five of twenty-one infants died from this cause. In operating for imperforate anus it is important to apply an appropriate technic; a simple incision may entail stricture. The rectal ampulla should be loosened and fastened to the skin, even if this requires a laparotomy. This combined operation was done recently on a day-old babe with complete success to date, three years later.

Paris Médical

Feb. 1, 1919, **9**, No. 5

*Mishaps from Exposure to Roentgen Rays. E. Albert-Weil.—p. 81.
*Post-traumatic Spondylitis. J. Cluzet.—p. 92.
*Roentgen Findings in Tuberculosis Suspects. L. Delherm.—p. 96.
Radiotherapy of Fibromas. G. Réchou.—p. 100.
Errors and Prejudices with Mechanotherapy. Sandoz.—p. 103.
Bedside Roentgen Examination. J. Chatelain.—p. 108.

Accidents from the Roentgen Rays.—Weil had charge of the preparation of this special number of the *Paris Médical*, devoted to physiotherapy, as he was an international authority

on this subject, but the first page is devoted to his obituary. His recent untimely death was mentioned in the Paris Letter. His article heads the list of contributions, analyzing his personal experience as chief of the laboratory of electroradiology at the hôpital Trousseau. He calls "accidents" all modifications of the human organism not foreseen or not sought when the roentgen rays have been used, and he describes and classifies them under various headings. He says that it is important to bear in mind that any ulceration which develops without pain, at least during the period of its development, is not a roentgen ulceration. The rays may have been applied in treatment of some tuberculous or other lesion, and the latter may have progressed to ulceration. If the ulceration is not painful, the roentgen rays cannot be incriminated for it. There is not much danger of confounding a tardy roentgen ulceration with a tertiary syphilitic lesion, but this mistake has occurred in the past. The general disturbances, fever, toxemia and weakness during roentgen treatment of cancer are due to the efforts of the organism to throw off the products of the cancer, but nausea, vomiting and exhaustion may be from the ozone generated during the exposures. This assumption is sustained by the appearance of these symptoms sometimes in the nurses and attendants in the room.

Weil declares that the serious cutaneous lesions that develop soon after a series of exposures can be warded off by modern technic with almost positive certainty, but this cannot be said of cutaneous lesions that may develop tardily. Modern technic has reduced the chances of this to the minimum, but cannot guarantee against these distressing eventualities, not even with the most forewarned and careful radiologist, especially so long as our instruments for gaging the rays are only relative and so imperfect. Radiotherapy, like all active therapeutic measures presents a certain danger —although less than surgery, for he does not believe that any fatalities can be imputed to it. It would be a miracle if it were entirely free from danger. He prefers for tardy ulcerative radiodermatitis dressings with physiologic serum or polyvalent serum, covering with sterile gauze, smearing the skin around with a camphor salve and changing the dressings as seldom as possible. If alternation of simple measures fail, the healing process might be activated by the high frequency current or cauterization with hot superheated air, or carbon dioxid snow, which destroys the nerve terminals and replaces the atonic wound with a simple wound, or, perhaps better yet, excision of the ulceration, with Thiersch flaps. He warns that the laboratory must be well ventilated and large to eliminate the production of secondary rays which form on surfaces too near the tube. When a radiologist shows signs of roentgen injury, he should abandon the work entirely as the tissues have acquired an extreme hypersensibility to the rays and a special tendency to anaphylaxis, an indirect anaphylaxis. He refers to a recent compilation of 104 cases of roentgen cancer on radiologists, and warns that the makers of protecting devices do not always make them perfect, so that the protection is illusory. At the same time, he adds, radiologists are too apt to forget themselves in their zeal.

Traumatic Spondylitis.—Cluzet's roentgenograms confirm his statement that fracture of vertebrae and minor injuries of the spine may be followed by a tardy spondylitis more or less remote from the site of the trauma. This posttraumatic spondylitis in the six cases described was characterized by pain in the lumbar region, limitation of the movements of the trunk, and bony excrescences on the lumbar vertebrae at a greater or less distance from the seat of the trauma. The osteophytes are more localized and the spondylosis less pronounced than is the case with rheumatic affections of the spine. In another case a beak-shaped osteophyte had developed on the femur, just above the internal condyle, after a bullet wound of the thigh far above. The pain did not develop until four years after the injury, and there is reason to assume that the osteophyte had not developed until this time, although this cannot be proved. In one of the cases described, the osteophytes developed under the observer's eyes, and the pains developed with them. The pains and the stiffness were effectually combated with physiotherapy, massage, manual mobilization, functional training and electric treatment. In future he would apply radiotherapy if it proves to be a fact that the formation of the osteophytes accompanies the development of the pains.

Radiology of Tuberculosis Suspects.—Delherm relates that among the 1,100 men suspected of tuberculosis and sent to his *centre de triage* for confirmation, 694 proved to be exempt from tuberculosis. Others have reported that 50 per cent. of the suspects proved to be nontuberculous. Roentgen examination often turned the scale, the radiograms taken not only of the whole lung but of the suspicious points. Especially important is stereoscopy taken erect, in the course of the same apnea. When the apex looks suspicious, he leaves it and examines other parts of the lung, having the patient cough and breathe deep. Then when he returns to the apex he often finds that it has cleared up. Some people never aerate the apex fully. When the bronchi cast wide, pronounced shadows, usually bilateral, the presumption is in favor of ordinary bronchitis; with tuberculosis, with such findings there would be other signs of it in the lungs. With cancer of the lung, the subjacent lobe is clear, and the outline of echinococcus cysts is usually roundish and well defined. He has encountered one case of syphilis of the lung; the signs of infiltration under the right clavicle and positive physical findings were not accompanied by bacilli in the sputum, and rapid improvement followed specific treatment. After pleurisy, the base may look veiled, owing to symphysis, and the movements of the diaphragm may be hampered by adhesions, and the lung look gray in parts. The clearing up of the lung during respiration and coughing and the absence of foci of congestion in the subclavicular region are instructive. In other cases, however, nothing but the continued absence of tubercle bacilli from the sputum will finally exclude tuberculosis.

Feb. 15, 1919, **9**, No. 7

*Why Wounds Do Not Heal. G. Milian.—p. 129.
*Neuritis from Ischemia. E. Duhot.—p. 135.
*Fermentation and Reduction in Bacteriologic Diagnosis. A. Besson, A. Ranque and G. Senez.—p. 140.

Wounds That Do Not Heal.—Milian analyzes the reasons why certain wounds drag along without healing. One of the principal reasons is the failure to recognize the cause preventing the healing. Syphilis may delay the consolidation of fractures and the healing of superficial wounds. Extragenital soft chancre often fails of recognition. He gives an illustration of a case of giant soft chancres on the fingers and hand which had long been futilely treated on a mistaken diagnosis. Wounds may be kept from healing, intentionally by the patient, and unintentionally by the surgeon's abuse of disinfectants. Even hydrogen dioxid may be incriminated in this respect. The antiseptics which prevent or check healing may irritate the skin around, and this artificial dermatitis is far from exceptional, but is usually attributed to everything but the right cause. To prevent intentional irritation of the wound, the simplest means is to apply a large roller dressing and draw straight lines with ink down the front and sides with numerous crossbars. Any attempt to unwind the dressing is betrayed at once by the irregularity of these lines afterward.

Neuritis from Ischemia.—Duhot says that time has confirmed the possibility of neuritis developing when the nourishment and oxygen have been shut off from the region, and waste products accumulate. The optic nerve may suffer from the ischemia after severe gastric hemorrhages, and severe polyneuritis may develop after excessive losses of blood otherwise. Peripheral neuritis is usually traceable to injury of the axillary or brachial artery, the femoral at the base of the triangle of Scarpa, or the popliteal. The neuritis due to ischemia from this cause is usually accompanied by paralysis of the terminal type of distribution, with reaction of degeneration and possibly tendency to sclerosis later. The anesthesia is of the segmental and centrifugal type, and there may be causalgia. There are also usually trophic and vasomotor disturbances. In prophylaxis the vessels must be spared as much as possible in operating, etc. Hemostasis must be secured without total compression of the vessel. The ligature must be applied on a sound stretch and at a point where the clot will not obstruct the collaterals. Ligation of

the vein along with the artery has proved its superiority, as this maintains the balance in the circulation.

Fermentation and Reduction in Differentiation of Bacteria.—Besson and his co-workers have become convinced that the complete differentiation of bacteria requires study of their action on sugars in a fluid medium. They tabulate the findings in this respect with twelve different bacteria and five kinds of sugar and also with mannite, dulcite and glycerin. Their research indicates that the aerobic bacteria can be classified in three great groups: those that are inert to sugar and alcohols; those that attack them but without production of gas, and those which attack sugars and alcohols with generation of gas. These main groups can be subdivided according to the sugar attacked. Reduction of neutral red also differs when sugar or gelose is added to a medium containing neutral red, and this occurs in a characteristic way useful in differentiation. They have found very useful what they call the "diagnostic tube B." The medium is made with 1 liter of "beef water" (*eau de viande de bœuf*); 4 gm. glucose, and 3 c.c. of a 1 per cent. aqueous solution of neutral red. This mixture is distributed in test tubes, each containing an inverted hemolysis tube which serves for a fermentation bell. The tubes are sterilized at 110 C. and can be inoculated with a loop of the culture or one drop of a fluid medium. In eighteen or twenty-four hours in the incubator the tube will show whether there is any reduction of the neutral red, acidification or alkalinization of the medium, the production or nonproduction of gas, and the approximate amount, and the varying phenomena from anaerobiosis in the bell. This tube allows the bacteria involved to be recognized almost at a glance by the characteristic changes evident in the tube. With the colon bacillus for example, there is fluorescence and a yellow tint, while the bell is half full of gas. With typhoid and dysentery bacilli, the fluid is purplish and there is no gas production. The findings exclude at once a large number of germs which otherwise it would take long to eliminate.

Presse Médicale, Paris

Feb. 10, 1919, **27**, No. 8

*Diagnosis of Amebic Liver Disease. P. Ravaut and Charpin.—p. 65.
*Chronic Enteritis in Soldiers. J. Carles.—p. 67.
*Influenza and Epilepsy. G. Maillard and Brune.—p. 70.
Jugulo-Carotid Aneurysms. P. Aumont.—p. 71.

Amebic Liver Disease.—Ravaut and Charpin state that in a large proportion of twenty-one recent cases of amebic hepatitis in soldiers there was nothing in the previous history to suggest amebiasis. Fully half of the men had never presented dysentery, had never been out of France, had had no fever before and the stools were normal and free from amebas in any form, and yet an exploratory puncture revealed amebas colonizing in the liver. It is possible, they suggest, that the ameba induces a different clinical picture in a temperate climate from that in the tropics. No other assumption will explain the facts here related. Be this as it may, amebic hepatitis should be thought of whenever a patient presents signs of hepatitis, usually febrile, with a distinct painful point. The suspicion of amebic hepatitis can be confirmed by exploratory puncture or by the success of medical treatment. They have been most successful with a combination of an arsphenamin preparation and emetin. Under this, soon the pain and fever subside and the liver becomes reduced in size and the general health improves to complete restitution. Two of the patients had been labeled tuberculous on account of concomitant congestion of the lung, and some had been under treatment for malaria. In a few weeks they witnessed an actual resurrection. In conclusion they warn physicians not to allow themselves to be surprised by amebiasis when this medical treatment will not only confirm the diagnosis but cure the patient as well. In a typical case reported the patient was given ten intravenous injections of 0.3 gm. of French neo-arsphenamin at six day intervals and eighteen injections of from 0.04 to 0.08 gm. of emetin—all in the course of forty days.

War Enteritis.—Carles describes eight different forms of chronic intestinal disease common in the soldiers returning from the different seats of war. Each requires special treatment, and he epitomizes the means for differential diagnosis and treatment. According to the special parasite involved the disturbances subside under emetin, sulphur, thymol, turpentine, or male fern. In exceptional cases the enteritis may be a sequel of paratyphoid or bacillary dysentery; the rectocolic ulcerations require local measures along with vaccine and serotherapy. Test meals will reveal a functional digestive insufficiency and suggest the treatment. The enteritis may be due to abnormal fermentation or be an actual intestinal neurosis, an "abdominal sympathosis," requiring prolonged local and general treatment.

Influenza and Epilepsy.—Maillard and Brune noticed in the service for epileptics at the Bicêtre hospice that no seizures occurred during the course of intercurrent influenza. The seizures returned as before after recovery from the influenza, but this inhibiting effect from the latter was striking and should encourage research along similar lines. They were impressed further by the exceptional gravity of the influenza among the epileptics; there were thirty-two deaths in the sixty-three cases; two other deaths could not be atributed directly to the influenza. They remark, *Les épileptiques sont des congestifs*, and hence a disease tending to induce further congestion is particularly serious for them. None of the inmates of the hospice who had influenza during the June epidemic contracted it anew during the October wave.

Feb. 13, 1919, **27**, No. 9

*Leprosy at Marseilles. L. Perrin and G. Brac.—p. 77.
Examination of Vision of Aviators. A. Cantonnet.—p. 78.
*Anesthesia for Operations on Face and Neck. L. Dufourmentel.—p. 79.
*Autoserotherapy of Meningitis. J. Abadie and G. Laroche.—p. 82.

Leprosy in France.—Perrin and Brac examine for traces of leprosy all colonial troops arriving at Marseilles. They have been able to detect the disease thus in its very earliest manifestations. In some cases there was merely depigmentation of the skin at various points, giving the body a piebald aspect although the visible portions of the skin were apparently normal. One robust negro had one shoulder, the upper arm and half of the back form a white area in sharp contrast to the ebony skin around. Fifty men with incipient leprosy have been detected among the troops or working in factories, and have been repatriated. The leprosy had escaped detection when they entered the country. In some cases the only manifestations are a few tubercles, usually grouped in a circle on a zone of erythema; sometimes the lesion is scarcely larger than a silver quarter, and differentiation from syphilids and tuberculids is difficult. The increase in size of the ulnar nerve and the disturbances in sensibility confirm the diagnosis, but the sensibility may be variable and conflicting. Persistence of sensation does not exclude leprosy. Sometimes there is dissociate sensibility. One man with far advanced leprosy showed only large achromic patches on the body although the ulnar nerves were enlarged, with symptoms of neuritis in the arms, atrophy of groups of muscles and, finally, gangrene of the left leg. They warn in conclusion that persons even with the initial manifestations of leprosy are liable to spread the germs broadcast.

General Anesthesia for Operations on Face and Neck.—Dufourmentel concludes from his own experience and that of others that ether anesthesia by the rectum is the best method of anesthesia for children and for debilitated adults and for the tuberculous. It does not induce anesthesia in healthy adults as a rule. He insists that pure ether does not irritate the rectal mucosa, and hence there is no need to mix it with other substances. He uses about 2 c.c. of ether per kilogram injecting it through a Nélaton catheter of hard rubber, the catheter inserted for 10 or 15 c.c. It is then left in place, the outer end clamped, in order to facilitate evacuation of the ether at need. Inhalation of a few drops of ether or chloroform hastens and completes the anesthesia. The ideal anesthesia for operations on face and neck is by inhalation through a laryngotomy opening. His experience has confirmed more and more the advantages of this method.

Pyocyaneus Meningitis.—Abadie and Laroche cultivated the pyocyaneus from the spinal fluid of a young soldier with

meningitis, and relate that they cured him by intraspinal injection of 3 c.c. of the patient's own serum, repeated thirteen days later.

Correspondenz-Blatt für Schweizer Aerzte, Basel

Jan. 25, 1919, **49**, No. 4

*Tuberculous Abscesses in Wall of Chest. H. Iselin.—p. 97.
*Chronic Nontuberculous Tendovaginitis. A. Vischer.—p. 103.
*Intranasal Removal of Lacrimal Sac. A. Affolter.—p. 115.

Tuberculous Abscesses in Chest Wall.—Iselin asserts, on the basis of his experience with 177 cases of tuberculous lesions in the chest wall, that it is not absolutely indispensable to resect the rib involved. This was the routine practice at the Basel clinic until the last few years have demonstrated that such lesions may retrogress under roentgen exposures. His prolonged study of his 177 cases has convinced him that the ribs are involved only secondarily. In 98 operative cases, sequesters or a probably primary bone lesion were found in only 6 cases, and the ribs were involved in only 3 of them, and in one of these the patient was a syphilitic. The fistulas ran in various directions, and the attempt to trace them to their source entailed the danger of opening the pleura. The success of roentgen treatment confirms further that the abscesses and fistulas are not connected with production of sequesters. Even the smallest sequester renders conservative treatment futile, but he has had 56 complete cures among the 77 cases in which systematic roentgen treatment was applied. In 16 of the 21 cases in which it failed, there were progressive tuberculous lesions in the lungs or elsewhere to which the patients succumbed. If the bone had been involved, roentgen treatment could not have cured 56 out of 77 cases with prompt and smooth recovery. In only 3 cases were the roentgen findings suspicious of primary tuberculosis. In 16 of 41 cases, there was a history of pleurisy, and in 14 of these cases the abscess in the chest wall developed after puncture of a pleural effusion, but not at the site of the puncture. The abscess was more of the nature of a gravity abscess, traceable to pleurisy, pericarditis or tuberculous glands. Tuberculous lymphangitis may set up multiple fistulas but the ribs are only exceptionally involved. Otherwise treatment should be conservative: aseptic puncture and evacuation, injection of iodoform or camphor and phenol, with roentgen exposures, heliotherapy, arsenic, iodin or inunctions. Not much can be anticipated from any treatment with a progressive pulmonary lesion in addition.

Nontuberculous Tendovaginitis.—Vischer remarks that the clinical picture interpreted as the result of stenosis from an inflammatory process in the tendon sheath has gradually obtained anatomic sanction and basis. The thickening of the wall of the tendon sheath narrows the lumen and binds the tendon, and the resulting disturbances demand operative relief. This is easily realized by simply slitting the tendon sheath. This puts an end to all trouble from this source. The thickening of the tendon sheath may be due to excessive functional demands, to rheumatism or to gout, or to a combination of these.

Intranasal Transseptal Dacryocystectomy.—Affolter shows in four illustrations how he obtains access through the nose to the lacrimal sac by resecting the lower portion of the septum, as for correction of deviation. The lacrimal sac is then easily reached with the instrument introduced into the opposite nostril and passed through the gap in the septum to the sac. A large number of patients have been operated on in this way, with complete success and without visible scar.

Policlinico, Rome

Feb. 2, 1919, **26**, No. 5

*Extinction of Focus of Trichinosis. G. Volpino.—p. 129.
*Postinfluenzal Immunity. D. Falcioni.—p. 133.
Antiserum Treatment of Tetanus. V. Grossi.—p. 139.
*Double Resection of Intestine. P. Pacchini.—p. 142.
Empyema with Expulsion of Scraps of Lung Tissue. P. Perazzi.—p. 144.

Rarity of Trichinosis in Italy.—Volpino relates that a hog with trichinae at Bergamo two years ago infected those who had eaten the meat, as also some dogs and rats, and a second hog was found infected at a point several miles distant. It had been previously affirmed that domestic animals in Italy were immune to trichinosis, and this focus of infection seemed to become spontaneously extinct in the region, as no animals, rats or dogs have shown any traces of trichinosis since.

Postinfluenzal Immunity.—Falcioni mentions among other significant happenings that a certain orphan asylum at Rome had escaped the epidemic of influenza until Jan. 2, 1919, when 100 of the 120 inmates developed the disease within three or four days. Of the twenty who showed no symptoms of it, sixteen had been recently orphaned by the death of their parents from influenza, and two others had had the disease at another asylum a few months before. Out of the entire 120 there were two who seemed to possess a natural immunity. There have been three waves of the epidemic at Rome, and each time it seemed to spare those who had had the disease before.

Double Resection of Intestine.—Pacchini operated twenty hours after a gunshot wound of the abdomen and found it necessary to resect two segments of the small intestine. A total of 1.5 meters was thus removed, requiring two enteroanastomoses. Notwithstanding the acute visceral peritonitis and lesions of mesenteric vessels, smooth recovery followed, the bowel functioning apparently regular, and the young man has regained his former weight.

January, 1919, **26**, Medical Section No. 1

*The Law of the Heart. A. Murri.—p. 1.
*Arrhythmia in Malta Fever. G. V. Ferralis.—p. 18.
Titration of Complement for Wassermann Test. B. Frattini.—p. 23.
*Typhoidal Hemiplegia. E. de Sarro.—p. 32.

The Law of the Heart.—This is the title of a recent work by E. S. Starling, and Murri recalls his own publications on this subject thirty-two years ago based exclusively on clinical findings, while Starling's work is based to a large extent on experimental research. Murri's findings were on abnormal hearts; he began therefore where Starling's law leaves off, at the limits of the normal. His experience therefore justifies amplifying Starling's law to the effect that while distention of the fibers of the sound myocardium increases the force of its contraction, with a diseased myocardium, however, the effect is to increase the number of insufficient contractions. He insists that the dilatation is the origin of the higher pulse rate, while Lewis and certain others regard the increased pulse rate as the origin of the dilatation. Murri quotes Pratt's article on "Digitalis Therapy," in THE JOURNAL, Aug. 24, 1918, saying that Pratt's conclusions confirm his own publications of twenty-one years ago.

Arrhythmia in Malta Fever.—The arrhythmia was of the complete sinusal type in the boy of 14 with Malta fever. The heart action became regular once more as he recovered.

Typhoidal Hemiplegia.—De Sarro's two patients were a young woman and a girl of 14 and both developed hemiplegia in the course of typhoid fever, on the right side in the girl, accompanied by aphasia. In the other the onset was with a convulsion, followed by hemiparesis and then hemiplegia but no signs of meningitis. The hemiplegia gradually retrogressed in the course of two months. In the girl the paralysis with contracture and the aphasia do not show much improvement to date. De Sarro compares with these two cases similar experiences from the literature. The sudden onset, the abrupt drop in the temperature, the aphasia, and the symptoms in general seem to point to an embolism in the left Sylvian region in the younger patient.

Riforma Medica, Naples

Jan. 25, 1919, **35**, No. 4

*Uremia. S. Livierato.—p. 65.
*Plastic Motor Operations. G. Vanghetti.—p. 71.

Uremia.—Livierato discusses the significance of azotemia for the diagnosis and the prognosis, as ascertained in sixty-three patients with various diseases. His findings are compared with those of others in this line. The highest degree of uremia was found always in the cases of nephritis. The six cases with the highest figure all terminated fatally; the range was from 0.86 to 1.90 per thousand in these cases. But one patient with chronic nephritis and 1.25 per thousand urea

in the blood materially improved, and in some other cases of chronic nephritis the urea content of the blood was within normal range. The patients in this group all improved. The routine determination of the urea content of the blood revealed uremia in some cases in which, at the time, there was nothing otherwise to indicate retention of urea. This confirms Widal's statement that there is no absolute relation between the symptoms of azotemia and the degree of retention of urea. Livierato's fatal cases of nephritis with low uremia show that the prognosis may be grave even when the urea content of the blood is below that which is generally regarded as the limit of tolerance. This conflicts with Widal's classification of the cases as doomed to a fatal termination in a year with urea content of 1 or 2 gm., and within a few months or weeks with 2 or 3 gm. Livierato regards the outlook as grave with from 0.5 to 1 per thousand, but in his experience some of the patients in this class took a turn for the better, and some seem to have entirely recovered.

Plastic Motor Operations.—Vanghetti discusses this subject from the theoretic point of view and pleads for construction of artificial limbs "aiming at the greatest possible autarchy," as he expresses it, "not a pseudo-automatism." He suggests that it might be advisable to train cripples in a certain part of the work of making artificial limbs. What he calls "mixed cine-prostheses" seem to be the prostheses of the future, but it requires brains to design them and brains and study to adapt the amputation to this future function.

Feb. 8, 1919, **35**, No. 6

*Report on Pola Expedition. R. Paolucci.—p. 105.
*Pathogenesis of War Psychoneuroses. G. Pellacani.—p. 111.
Arthritism as an Infection. A. Ferrannini.—p. 116.
Differential Diagnosis of Appendicitis. T. Hernando.—p. 118.

Official Report of Naval Medical Officer.—This is the official report on the exploit in which the young navy surgeon, Paolucci, with one companion, harnessed a torpedo and rode it under harbor nets and through fields of mines and blew up the last of the five cruisers with which Austria entered the war. As some one said of the charge of the Light Brigade, *C'est magnifique mais ce n'est pas la guerre*, so the exploit of this medical hero of Pola *est magnifique mais ce n'est pas la médecine*, and consequently it cannot be given space in these columns.

War Psychoneuroses.—Pellacani insists that pithiatism, in Babinski's sense, forms part of hysteria, but that it is by no means all of hysteria, and this fact is particularly evident in war psychoneuroses as he explains. The essence of hysteria is the psychogenesis of the symptoms, and the essence of the psychogenesis is the susceptibility to suggestion. He emphasizes the necessity for drawing a sharp line of distinction between the emotional trauma, the emotive neurotraumatism with a neuropathic set of symptoms and a posttraumatic psychopathy, on the one hand and, on the other, the psychic factors (representative—emotional—suggestion—hysterogenous: psychogenesis) and the metatraumatic psychoneurotic set of symptoms. The two sets of symptoms may be associated, but the distinction between them is precise and essential, and it should be maintained to avoid continuous error and confusion.

Anales de la Facultad de Medicina, Lima

November-December, 1918, **1**, No. 6

*Echinococcus Cyst of Liver. E. Odriozola.—p. 159.
Borates in Waters of Arequipa District. M. A. Valesquez, E. Escomel and A. Maldonado.—p. 165.
Early Psychology in Peru. H. Valdizan. Cont'n.—p. 173.
*False Gallstone in Stomach. J. V. Bernales.—p. 196.
Psychanalysis. H. F. Delgado.—p. 202. Cont'n.

Echinococcus Disease of the Liver.—The first revealing symptom in Odriozola's case was jaundice coming on suddenly and intensely. There had been a few periods of malaise during the preceding months with vomiting and lassitude, and the onset of the jaundice was accompanied with transient intense pruritus. The jaundice had persisted for over two years, and the young man complained of oppression in the right hypochondrium, but there was no tendency to fever at any time and no pains to suggest gallstone mischief, although the stools were continuously clay colored. The absence of eosinophilia and the negative Wassermann reaction and absence of history of syphilis justified an exploratory laparotomy. This was done at the close of the third year, and a cystic tumor was disclosed on the concave aspect of the left lobe of the liver. The tumor was 15 by 9 cm. in diameter and 5 cm. thick, and its deep location rendered it extremely difficult to reach. The patient succumbed to hemorrhage in the depths the third day. The liver weighed 3,000 gm. and measured 36 by 24 and 8 cm. There had never been any pain from it, and nothing could be palpated that suggested a tumor. The jaundice was evidently due to compression of the bile duct by the tumor.

False Gallstone in the Stomach.—Bernales' patient was a man of 40 who for two years had been having acute pain at times in the stomach at intervals of four or five days, with no connection with the food. Each attack was accompanied with eructation and vomiting, with sometimes traces of blood. Giving up all work after five months of these attacks banished them completely during the eight months of rest, but the pains returned as severe as ever when he returned to his work as a miner. The attacks became more severe and returned daily, the pain always located in the stomach or radiating to the left hypochondrium, and it did not yield even to morphin. The stomach was opened and a calculus was removed which seemed to be a gallstone, about 2½ inches by 1½ wide, shaped like a potato. This calculus was formed of a clot of blood, almost organized, coated with bile pigments.

Archivos Españoles de Tisiologia, Barcelona

January, 1919, **1**, No. 1

*Action of Tuberculin on the Blood. F. Mas y Magro.—p. 1.
Defensive Ferments in Tuberculin Treatment. R. Dargallo.—p. 79.
*Mitral Stenosis and Pulmonary Tuberculosis. J. V. Montenegro.—p. 89.
Diffuse Tuberculous Cellulitis. A. C. Lladó.—p. 97.
*Roentgen Findings in Tuberculous Lung. L. Sayé.—p. 105.

Importance of Color Index and Differential Blood Count as Guide for Tuberculin Treatment.—Mas y Magro's extensive study of the influence of tuberculin on the blood and blood-producing organs is the first article in this handsome new journal which herewith enters the scientific arena. It is to be published three times a year, with possibly supplements at shorter intervals, the whole to form a volume of about 600 pages. The annual subscription is 30 pesetas, about $6, and Dr. L. Sayé, Aragon 282, Barcelona, is the editor.

Mas y Magro reports that tuberculin modifies constantly and profoundly the blood and blood-producing organs. These modifications pass through three phases, the blood first tolerating, then showing signs of saturation, and then, finally, of toxic action. Each of these phases can be readily estimated from the color index and the differential blood count, as he explains in detail. The febrile reaction occurs only when the stage of saturation or toxic action is reached. The differential blood count and the color index will thus enable us to guide tuberculin treatment so as to keep it just short of inducing the harmful febrile reaction. His research was done on twenty-two guinea-pigs besides extensive clinical experiences. The differential counts day after day are given and the histologic findings in the animals at different intervals. The constancy of what he calls the basogranular reaction after the first injection of tuberculin was striking in all the animals and in the four healthy adults tested, in twelve afebrile tuberculous patients, and in three febrile patients with leukocytosis. This reaction indicates, he reiterates, a toxic influence on the blood-producing apparatus from the very first and with remarkable promptness. In all his investigations of the action of different substances on this apparatus, he has never found one so prompt and constant in its action as tuberculin. It is not surpassed even by lead and, much less, by molybdic acid.

When the tuberculin is well tolerated the color index declines. In the saturation phase it keeps stationary, and it runs up in the toxic phase. When the stationary color index denotes that the stage of saturation has been reached, a very minute dose of tuberculin will suffice to transform it into the toxic phase. The curve of the color index, taken twenty-

four hours after the therapeutic dose, will thus serve as a guide for the next dose, and we can thus ward off any febrile reaction. When the injections are continued after the blood findings show that the toxic stage has been reached, symptoms of a general toxic order soon become apparent, loss of appetite and weight, prostration, etc. The color index alone seems to be a most exact and sensitive guide for tuberculin treatment, while it does not require much technical skill to divide the percentage of hemoglobin by the percentage of red cells as compared with the recognized normal, namely, 5,000,000, to determine the color index.

Mitral Stenosis and Pulmonary Tuberculosis.—Montenegro relates that in his 20,000 cases of pulmonary tuberculosis he encountered only one case in which active pulmonary tuberculous lesions were accompanied by mitral stenosis. This is a proportion of only 0.005 per cent. and justifies the general assumption that mitral stenosis is an obstacle to the development of pulmonary tuberculosis. Even this one case in his experience tends to prove this because the pulmonary lesions kept mild even during the woman's two pregnancies. He adds that this was the only patient with pulmonary tuberculosis among his 300 cases of mitral stenosis. It formed thus 0.3 per cent.

Roentgen Findings in Pulmonary Tuberculosis.—Sayé gives five fine roentgen plates and interprets the findings in twenty-five cases. He follows this with a study of the anatomy and clinical findings with pulmonary tuberculosis in general, comparing the four great types, the cheesy, the fibrous, the fibrocheesy and the miliary, and their findings, the heredity with each, the initial and later symptoms, the roentgen findings in different phases, the complications and duration. He appends thirteen solidly printed pages of bibliography on various phases of phthisiology published in the last two years.

Brazil-Medico, Rio de Janeiro

Dec. 28, 1918, **32**, No. 52

*Myxosporidia in Brazilian Fishes. A. M. Da Cunha and O. Da Fonseca.—p. 414. Cont'n.
*Chart for Recording Gynecologic Data. J. Adeodato.—p. 414.

Myxosporidia in Brazil.—Da Cunha and Da Fonseca have been publishing each week descriptions of new species derived from Brazilian fishes.

Palpation of the Vagina.—Adeodato gives an illustration of a diagram in the form of a circle barred off like a compass into eight portions on which he records the findings of palpation of the vagina and internal genitals. Each division corresponds to some part of the field under examination: To the north, the bladder, the anterior surface of the uterus and the cervix; to the south the pouch of Douglas and the rectum; to the west the parametrium and the right tube; the right ovary to the southwest; to the northwest the right round ligament. Recording the data by this means shows the relation between the findings, impresses them on the memory, and has proved extremely useful in his experience.

Revista de la Asoc. Med. Argentina, Buenos Aires

November, 1918, **29**, No. 168

*Antibodies in Leukocytes of Immunized Animals. A. Bachmann.—p. 549.
History of Public Hygiene in Argentina. E. R. Coni.—p. 574, Cont'n.
*Postoperative Obliteration of Mesenteric Vessels. P. Escudero.—p. 625.
*Tracheobronchial Glandular Disease in Children. J. P. Garrahan and O. S. Dastugue.—p. 643.
*Cyst in Lower Jaw. J. M. Jorge (h.) and J. Layera.—p. 662.
Tuberculosis. J. J. Vitón.—p. 690. Cont'n.

Immunization to Infections.—Bachmann expatiates on the highly important specific property acquired by the leukocytes in the course of an infection or inherited. This property is not much modified even by the death of the leukocytes; it is possible to immunize small animals with the killed immune leukocytes, but larger quantities are required than with the living leukocytes. The plasma alone does not have this immunizing action. The specific property possessed by the leukocytes does not pass into the serum at the moment of coagulation, but it can be obtained in the serum by treating the leukocytes with congelation, according to Buchner's technic, thus transforming the fluid in which the cells are suspended into a preventive antiserum. By this means we practically isolate the substance which confers the immunizing property on animals and man. Bachmann explains that it is found exclusively in the polynuclears of immunized individuals, and it saves others from infection with spontaneous or induced infection. These specific substances have been called leucines and endolysins, and he has found them effectual not only in immunizing guinea-pigs against infection from microbes injected intraperitoneally but also in aiding to cure already established infection. By heating the well diluted endolysins to 75 C. in the presence of a little gelatin, the common bactericidal properties of the leukocytes were destroyed while the specific immunizing property did not seem to be impaired. Small animals injected with the leukocyte immune products, one hour after inoculation with the infectious germs, all survived, while all died of those injected merely with ordinary leukocytes or plasma or both; the infection running the usual course as in the controls. Bachmann reiterates that his success in getting rid of the bactericidal element of the endolysins leaves the specific immunizing substances free to exert their action. Their constitution seems to be analogous to that of the antibodies in the serum, but it seems to be a more stable specific element than the serum antibodies, and this has permitted its isolation. The research was done mainly with anthrax, but the results were confirmed with typhoid infection. He reiterates that these facts complete the cycle of transformation undergone by the leukocytes in acquired immunity. His article is in French.

Postoperative Obliteration of Mesenteric Vessels.—Escudero has found records of 360 cases of postoperative thrombosis of the mesenteric vessels up to the year 1913. The correct diagnosis has been made only in thirteen of the total 360 cases. In his own experience with three cases the mesenteric thrombosis proved fatal in two within three days after an operation for chronic appendicitis or adhesive perienteritis. In the third case there was an interval of a month after the laparotomy for acute appendicitis before the thrombosis developed and proved fatal in two days. The diagnosis wavered between acute hemorrhagic pancreatitis and mesenteric thrombosis, but the operation twenty hours after the first symptoms confirmed the latter; ascending venous thrombosis from the primary focus was evidently responsible. In the two other cases the vessels showed signs of syphilitic changes, confirming the frequency of syphilis as a factor in postoperative mesenteric thrombosis. The vessels are already so pathologic that even the slightest superposed element is sufficient to induce the thrombosis. The clinical picture may include intense pain, rebellious to morphin, tympanites around the umbilicus, developing about six hours after the operation, profuse gastric hemorrhage, pulse up to 120 or 160, with cyanosis, restlessness and insomnia, all developing within twenty-four hours. Another laparotomy is the only means of salvation, and this only when done in time and the lesions are not already irreparable.

Diagnosis of Tracheobronchial Glandular Disease in Children.—Garrahan and Dastugue found the tuberculin reaction positive in 79 of 115 children suspected of tuberculosis, the proportion increasing regularly from 48 per cent. between 2 and 6 to 95 per cent. between 11 and 13. In a number of the children presenting pronounced physical signs, there was nothing in the roentgen picture to suggest glandular involvement. On the other hand, some of the children free from physical signs of tuberculosis showed distinct roentgen findings with enlarged glands. The tuberculin reaction also did not always correspond with the roentgen and physical findings. In 41 children with little or no signs of glandular involvement, the tuberculin reaction was positive in 39 per cent. as also in 85 per cent. of the 74 with evidences of tracheobronchial glandular disease. These experiences confirm the inadequacy of percussion and auscultation in detecting tracheobronchial glandular disease.

Cyst in Lower Jaw.—Jorge and Layera remark that the rapid and complete recovery in the case of dentiferous cyst reported confirms the advantages of the technic applied. The patient was a man of 37 and the outer wall of the cyst was respected. They merely opened up the cyst widely and kept

it open for forty-eight hours. The cavity was then tamponed after touching the walls with tincture of iodin. In forty-eight hours the tampon was removed, the cavity was rinsed out repeatedly with a mild antiseptic, and the patient kept on fluid food for two weeks. The bone has regenerated during the months since, aided by the refraining from resection of the wall.

Revista de Medicina y Cirugia, Havana

Jan. 25, 1919, **24**, No. 2

*The Pandemic of Influenza. M. R. Casabó.—p. **29**.
*Anti-Influenza Bacterin. A. Recio.—p. 35.
*Post Influenzal Amblyopia. A. F. Oñate.—p. 53.
*Tardy Hemorrhage after Removal of Adenoids. H. Seguí.—p. 55.

Influenza.—Casabó reports encouraging success in treatment of influenza with a vaccine made from the sputa and secretions in some grave cases of influenza. With the germs thus derived, a vaccine and a bacterin were prepared, and in thousands of applications he never heard of a mishap.

Recio describes the technic by which this polyvalent, mixed anti-influenza bacterin was made. Agar with human blood was the culture medium, and as the microbes are used as primarily developed, there is greater chance, he says, that the bacterin contains the unknown virus responsible for the influenza than those prepared by other technics. They have distributed 10,000 doses (four ampules each), and have had most favorable reports of its prophylactic action. In one group of 300 persons thus vaccinated only five developed influenza and two of these had had only one and the other two doses, instead of the routine four. In the two other cases the influenza developed six weeks after the vaccination but ran a very mild course. None of 100 children thus vaccinated at the height of the exceptionally severe epidemic at Camagüey contracted the disease.

Postinfluenzal Amblyopia.—Oñate's two patients who developed amblyopia after influenza were a dentist and a merchant of 65. The influenza in the first mentioned was of severe gastro-intestinal type, in the other of the pneumonia type. The ophthalmoscopic findings and the urine were normal in both, and the progressive amblyopia was evidently of toxic origin. Oñate ordered the first patient to refrain from meat, taking mostly milk and purées of vegetables, with Bulgarian bacilli and a mild laxative. Under a week of this, vision in one eye returned to normal, and by the end of the second week also in the other eye. The man had been having an intense urticaria with the amblyopia, and this subsided with it. In the second case the same treatment was given, with sodium iodid internally in addition, with equally prompt success.

Severe Hemorrhage After Removal of Adenoids.—Seguí's case teaches the necessity for repose after an operation on the throat. Only the most urgent measures, packing the entire cavity, succeeded in arresting the severe hemorrhage which had already induced a syncopal condition. After the adenoids had been removed, the mother was told to take the boy of 12 home in her automobile and put him to bed, or at least make him lie down. But instead of this the pair went shopping, and the alarming hemorrhage came on the third hour. Seguí refers also to a similar tardy hemorrhage in an adult after removal of relics of adenoids. All warn of the necessity for keeping in bed for twenty-four hours at least after any operation on the throat. In none of the cases was there any suspicion of hemophilia.

Semana Medica, Buenos Aires

Jan. 2, 1919, **26**, No. 1

Influenza at Rio de Janeiro. F. S. Guasch.—p. 2.
*The Islands of Langerhans. P. J. Garcia.—p. 6.
*Syphilitic Sterility and Amenorrhea. G. Giacobini.—p. **14**.
School Lunches. E. R. Coni.—p. 16.
State Care of the Hospitals and the Public Health Service in Latin American Cities. I. Colombia. C. Solano R. (Bogotá).—p. 19.

The Islands of Langerhans.—García declares that the islands form part of the internal secretion system. The pancreas thus has two cycles of secretion, an internal and an external. Comparative anatomy and embryology confirm this view, and show further that the acini and the islands of Langerhans become reversible in time. There is much to sustain the assumption, he says, that the secretion of these islands is what controls the metabolism of sugar.

Syphilitic Amenorrhea.—Giacobini cites some cases from his experience which confirm that syphilis alone may be responsible not only for sterility but for amenorrhea and the premature menopause.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

Jan. 4, 1919, **1**, No. 1

*Herman Boerhaave, 1668-1738. E. C. van Leersum.—p. 1; —p. 85; —p. 100.
Boerhaave as Man and Chemist. E. Cohen.—p. 13.
Boerhaave as Historian of Nature. F. W. T. Hunger.—p. 36.
Boerhaave and Ophthalmology. W. P. C. Zeeman.—p. 44.
*Boerhaave as Lecturer. E. C. van Leersum.—p. 50.
Portraits of Boerhaave. J. P. K. de Zwaan and others.—p. 77.
Boerhaave and the University. J. E. Kroon.—p. 87.

Boerhaave.—The entire issue of the *Tijdschrift* is devoted to this great physician of the seventeenth century in memory of his birth, 250 years ago, Dec. 31, 1668. A number of illustrations accompany the different articles, with reproductions of letters and other documents, including Van Swieten's shorthand notes of Boerhaave's lectures. Van Leersum has been studying these notes for years and gives the transcription of them. The lectures were in Latin and the notes cover a period of several years, including the latest lectures. An exhibition of Boerhaaviana was held at Leyden and the anniversary was formally celebrated with much ceremony.

Jan. 11, 1919, **1**, No. 2

*Pathogenesis of Gastric Ulcer. C. D. de Langen.—p. **178**.
*Influenza. E. Bemelmans.—p. 184; A. Cijfer.—p. 187.
Diagnosis of Acute Appendicitis. A. Van Balen.—p. 188.

Pathogenesis of Gastric Ulcer.—De Langen discusses gastric ulcer from the standpoint of clinical medicine, emphasizing its extreme rarity among the natives of Java. It seems to be rare also in Japan. Examination of the stomach findings in thirty-five persons at Batavia, healthy or with malaria or other disease, failed to show any deviation from the normal figures in respect to acidity. On the other hand, the predominance of sympathecotony in the tropics and the absence of vagotony confirm the theory that vagotony is the main factor in gastric ulcer, and that the rarity of vagotony in the tropics is responsible for the rarity of gastric ulcer. De Langen's research on the higher tonus in the sympathetic nervous system in the tropics was summarized in these columns, Oct. 26, 1918, p. 1447. The facts observed apparently confirm the vagotonic origin of gastric ulcer.

Influenza.—Bemelmans says that the success of arsphenamin in curing contagious pleuropneumonia in horses justifies its use in influenza. The disease in man and in the horse seems to be etiologically, bacteriologically and epidemiologically identical he declares. Arsphenamin has been used on a large scale for pleuropneumonia in horses during the war, he says, "striking quick and striking hard." A single intravenous injection seemed to save the horse. Alexander has recently reported that he has never seen influenza develop in persons who have recently been given some arsphenamin preparation. In conclusion, Bemelmans cites some writers who have reported benefit from arsphenamin in scarlet fever, typhus, eczema, and adenitis in horses and in pneumococcus infection. For horses, it has been found that the exact dose is extremely important. Bemelmans declares that the proper dose, given as soon as there are signs of serious complications in lungs or elsewhere, would undoubtedly have as favorable an action in man as in the horse.

Hygiea, Stockholm

Jan. 14, 1919, **81**, No. 1

*Transvesical Prostatectomy. G. Ekehorn.—p. **1**.

Transvesical Prostatectomy.—Ekehorn reports that the ultimate outcome in his 120 cases of transvesical prostatectomy was highly gratifying in all but five cases. These cannot be considered a perfect success like the others. He classifies the various degrees of disturbance from the enlarged prostate, and the results realized by the transvesical prostatectomy.